

**AN INVESTIGATION INTO THE ASSESSMENT OF
AUTOBIOGRAPHICAL MEMORY IN PEOPLE WITH MILD
MENTAL RETARDATION**

AND

RESEARCH PORTFOLIO PART I

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AUGUST 2000

**Submitted in part fulfilment of the degree requirements of the Doctorate in
Clinical Psychology, within the Faculty of Medicine, University of Glasgow**

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Acknowledgements

Thank you to Keith Bowden for his support as my research supervisor, and to Paul Flemming for statistical advice and his role as my Personal Tutor throughout the course. I wish to thank my clinical supervisors and their colleagues for a varied and challenging range of placements and their encouragement through all aspects of clinical training. Thank you to those who participated in my major research, and to the staff in the Community Learning Disabilities Teams across Glasgow for supporting participant recruitment.

I am thankful for my Friends and my Fellow Trainees who, for the last three years, have reminded me that there is more to life than clinical training and whose distractions have preserved my sanity.

This work is dedicated to my Parents and to Bryan (ace photographer). This journey would not have been possible without them.

Literature Review

**AUTOBIOGRAPHICAL MEMORY ASSESSMENT IN PEOPLE WITH
MILD LEARNING DISABILITIES: A POTENTIALLY IMPORTANT
AREA OF INVESTIGATION.**

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(See Appendix 1)

Abstract

Autobiographical memory is the term given to memory for life events. Research with people who do not have learning disabilities has highlighted that the ability to recall specific personal experiences and events from the past has important implications for the development of self-concept and social relatedness. In addition, autobiographical memory impairment is linked with problem-solving difficulties and depression. People with mild learning disabilities typically demonstrate poorly formulated self-concept, impaired social relatedness and problem-solving difficulties, as well as experiencing depression. It is suggested that these difficulties may be linked in some way to autobiographical memory. There is no published research addressing the assessment of autobiographical memory or the role of this aspect of memory in people with mild learning disabilities, and it is argued that investigating this area would bring together a number of important areas of learning disabilities research and provide a platform for future investigation.

Introduction

Autobiographical memory refers specifically to memory for life events involving the self as the object of the experience (Baddeley, 1992). It is a major form of human memory and is subject to the same influences as other aspects of memory, for example, frequency of rehearsal and level of cognitive functioning (Holland, 1992). Autobiographical memory is the raw material for most psychotherapies, it is an “important repository of legal, historical and literary information and fundamental in the conceptualisation of the self” (Rubin, 1986, pp 302). When specific autobiographical details are retrieved, information from past experience can be applied to novel situations (Baddeley, 1992), thus, autobiographical memory plays a significant role in everyday problem solving (Hyman and Faries, 1992; della Sala et al, 1992).

There is currently no published research that formally assesses the ability of individuals with mild learning disabilities to recall specific life experiences. This however, is an area that has been researched extensively in populations without learning disabilities and important links have been made between ability to recall specific autobiographical detail and poor problem solving skills and depression (for example, Goddard, Dritschel and Burton, 1997; Williams and Scott, 1988; Williams and Dritschel, 1988). Although autobiographical memory has not been formally assessed in people with learning disabilities, autobiographical reminiscence has been used therapeutically (Atkinson and Walmsley, 1999). The reminiscence process is considered to provide a more authoritative voice to this under-represented client group, and to consolidate self-concept by placing the individual in their historical context (Ingham, 2000). The successful clinical application of autobiographical memory in reminiscence work with people with learning disabilities, suggests that more formal assessment of this aspect of memory may be feasible. The need for more extensive investigation into the memory processes of people with learning disabilities, including studies of autobiographical memory, has been highlighted (Turnure, 1991).

Assessment and Retrieval of Autobiographical Information

Assessment of autobiographical memory has changed little from the methods first used in early investigations by, for example, Crovitz and Shiffman (1974) and Robinson (1976). The method involves presentation of a cue word, with instructions to the participant to recall as specific a personal memory as possible. Both emotion and non-emotion cue words have been employed (for example, 'happy,' 'angry,' Williams and Broadbent, 1986; 'letter,' 'dog,' Robinson, 1976). The process of autobiographical retrieval involves a guided search through different levels of information that are organised hierarchically in memory (Conway and Berkerian, 1987). The quality of retrieval is measured in terms of the specificity of response, that is, whether the response represents a discreet specific event in time as opposed to a composite of memories blended together. When the memory search is aborted at too early a stage in the hierarchy, the result is a categoric description that contains general autobiographical information rather than details of a specific event (Williams, 1996). For example, a categoric description might result in retrieval of a general memory - "My holiday in France last year" - versus a specific level of recall further up the hierarchical search - "The night of the storm when our tent blew down."

Clearly, the ability to summarise large numbers of individual episodes at a categoric or general level is efficient. Categoric descriptions provide quick access to information for many conversational purposes (Williams, 1996). However, for effective problem solving the retrieval of specific life events is essential in order to apply past experience to a current situation (Evans et al, 1992). Categoric descriptions facilitate the use of contextual information available to the individual, to inform a more specific mnemonic search (Williams, 1996). It is when the search process becomes stuck at the categoric descriptions stage, (for example, due to insufficient cognitive capacity to process the contextual information needed to access specific 'time' and 'place' memories), that the result is general autobiographical retrieval (Phillips and Williams, 1997). The term

“mnemonic interlock” has been used to describe this phenomenon (Williams, 1996, pp. 261). It follows that those with cognitive impairment, like reduced working memory or deficits of attention, will experience difficulties with the search for a specific memory. For example, studies with older adults have suggested that those who scored poorly on tests of fluid intelligence and other cognitive abilities exhibited poor recall of autobiographical details (Phillips and Williams, 1997; Holland, 1992; Holland and Rabbitt, 1990).

Depression is characterised by reduced cognitive functioning in terms of attention, concentration and memory (Beck et al, 1979). Research with depressed populations has consistently demonstrated that individuals respond less specifically to cued autobiographical assessment than non-depressed participants (Kuyken and Dalgleish, 1995; Brittlebank et al, 1993; Williams and Scott, 1988; Williams and Dritschel, 1988; Moore, Watts and Williams, 1988; Williams and Broadbent, 1986). Some research has suggested that depressed individuals’ responses are less specific to positive emotion cues than negative emotion cues (Bogue, 1997; Williams and Dritschel, 1988; Williams and Broadbent, 1986) but this has not been consistently replicated (for example, Goddard, Dritschel and Burton, 1997; Williams et al, 1996; Kuyken and Dalgleish, 1995; Moore, Watts and Williams, 1988). There is more evidence to suggest a general tendency for individuals from both clinical and non-clinical populations to more readily recall emotional material than emotionally neutral material (Williams et al, 1996; McNally et al, 1994; Dalgleish and Watts, 1990).

Substantial empirical evidence supports the argument that cognitive functioning is important in the quality of autobiographical memory. The implication is that cognitive impairment reduces an individual’s capacity for directed memory search and find strategies, resulting in the retrieval of less specific autobiographical detail.

The Role of Autobiographical Memory in Self-concept and Social Relatedness, Problem Solving and Depression

The function of autobiographical remembering has been explored extensively with populations who do not have learning disabilities. Research findings point to four important areas of human experience and development that are thought to be influenced by the ability to encode and recall autobiographical events. Although the areas are clearly linked, for the purposes of discussion, the role of autobiographical memory in self-concept and social relatedness will be introduced separately from problem solving and depression.

Self-concept and Social Relatedness

Howe and Courage (1997) and Welsh-Ross (1995) have specified that a precursor for the emergence of autobiographical memory in children is awareness of 'self' as distinct and separate from the environment. The development of meta-cognitive awareness of life events as being personally experienced is suggested to promote incorporation of those events into an autobiographical memory system. Self-conceptualisation is a continuous process and the type of autobiographical information that is remembered, shapes and consolidates representations of the self (Barclay and Smith, 1993; Brewer, 1986). Welsh-Ross (1995) has suggested that, in turn, only life experience relevant to the individual's sense of self enters the autobiographical memory system. This helps maintain consistent self-concept and self-schemata. Autobiographical memory is therefore subjective and the interpretation of personal history over time occurs often at the expense of historical truth (Barclay and Smith, 1993). It has been suggested that the ability to recall a range of specific emotional life events is important to promote emotional knowledge and experience (Sehulster, 1995). Thus, autobiographical memory has an interpersonal function in that it plays an important part in emotion regulation and the ability to relate emotionally with others (Barclay and Smith, 1993).

The emergence of self and subsequent development of autobiographical memory is therefore essential for the ability to engage socially and develop social relationships.

Problem-Solving and Depression

Autobiographical memory is a means of organising and accessing previous life experience (Della Salla, 1992; Hyman and Faries, 1992). In so doing, autobiographical memory not only has an important role in maintaining and shaping self-concept, it may also influence the ability to learn from past experience (Hyman and Faries, 1992). It follows, that the quality of autobiographical memory will have an important effect on problem-solving abilities, that is, the application of past learning experiences to current situations. The problem-solving deficits displayed by depressed individuals have been linked with the poor autobiographical memory specificity also demonstrated by this group (Goddard, Dritschel and Burton, 1997; Evans et al, 1992; Marx, Williams and Claridge, 1992).

Central to information processing models of depression is that depressed individuals see themselves and the world in a distorted manner (for example, Beck et al, 1979). Beck and colleagues have suggested that the activation of negative schemata introduces and sustains information processing biases, including attention to negative memories at the expense of positive recollections (Beck et al, 1979). A vicious cycle develops: depressed mood primes the accessibility of negative memories, which serve to maintain depressed mood (Teasdale and Russell, 1983). The depressed individual accumulates evidence that confirms and perpetuates negative views of the self, world and future. This fits with the suggestions from Welsh-Ross (1995), that self-concept influences the life experiences that are stored in autobiographical memory, and which continue to feed self-ideation. Poor autobiographical memory specificity has been linked with prolonged depression and is thought to increase the individual's susceptibility for repeat episodes of depressed mood. Those with a history of depression, but not currently depressed,

continue to demonstrate difficulties generating specific autobiographical memories (Brittlebank et al, 1993). An individual who has difficulty substantiating positive cognition with specific autobiographical material may be more likely to disregard positive thoughts as unrealistic (Moore, Watts and Williams, 1988). Consequently, negative life events continue to appear more pervasive and durable, leading to a relapse of depressed mood. Thus individuals with depression, or a history of depression, have restricted access to their memory 'database' resulting in impaired ability to counterbalance negative cognition with more positive cognition, or generate effective strategies for problem solving. Brittlebank et al (1993) have argued that cognitive behaviour therapy (CBT) is so effective with depression, in part, because task assignments like diary-keeping may help improve autobiographical memory by increasing the specificity with which life events are encoded in memory, thus increasing the availability of specific autobiographical material for retrieval.

The Relevance of Autobiographical Memory Research to People with Learning Disabilities

Memory Research with People with Learning Disabilities.

Deficits in memory are among the most frequently demonstrated psychological consequences of a learning disability (Swanson and Trahan, 1990). People with learning disabilities have been shown to exhibit short-term (Ferretti and Cavalier, 1991) and long-term (Boyd and Ellis, 1986) memory deficits in comparison with participants who do not have learning disabilities. It has been suggested that memory abilities demonstrated by this client group show quantitative rather than qualitative differences from individuals without learning disabilities (Vakil, Shelef-Reshef and Levy-Shiff, 1997; Boyd and Ellis, 1986). Turnure (1991) has reported that people with mild learning disabilities have both implicit and explicit memory systems that have sufficient capacity or potential to retain quite extensive amounts of learned information and skills.

Thus with training or prompting in memory enhancing techniques some people with moderate-mild learning disabilities are able to improve information encoding, storage and retrieval (Baldi, 1998; Bray et al, 1994).

From the evidence reviewed so far, it might be hypothesised that people with learning disabilities would demonstrate some ability to recall autobiographical material in response to different cues but, due to compromised cognitive abilities, and in light of memory impairments already identified, specificity of responding may be limited in comparison with people who do not have learning disabilities. As already highlighted poor response specificity has implications for the development of self-concept and social relatedness, problem solving and depression.

Self-concept and Social Relatedness

Individuals with learning disabilities tend to have a particularly negative self-concept (Evans, 1998; Reed, 1997). Jahoda, Markova and Cattermole (1988) interviewed a sample of individuals with mild learning disabilities and found that most had insight into their situation as stigmatised individuals. A number of issues salient to people with learning disabilities may contribute to poor self-concept, for example, greater exposure to negative experiences like failure, stigmatisation and social rejection (Reed, 1997). Thus, a disproportionate number of negative life experiences may negatively skew the content of autobiographical memory in people with learning disabilities and affect self-concept accordingly.

It has been demonstrated that, autobiographical memory is important in maintaining a coherent sense of self, helps to regulate feelings, imagine others as selves and establish and maintain different kinds and qualities of personal relationships (Barclay and Smith, 1993). The early establishment of autobiographical memory is in relatedness with others and autobiographical recall has been described as a socially governed process.

That is, beginning in childhood autobiographical remembering is essentially a social experience where the past is reconstructed and rehearsed through language (Fivush, Haden and Reese, 1996). People with Autistic Spectrum Disorders (ASD) have particular difficulties with social communication (Sigman et al, 1997). Children with ASD, and who do not have a learning disability, demonstrate differences in the content of their autobiographical memories compared to children without ASD. It is thought that this relates specifically to their difficulties establishing reciprocity in relationships (Barclay and Smith, 1993).

The difficulties many people with mild learning disabilities have in forming and sustaining relationships are evident (Krauss et al, 1992; Halpern, Close and Nelson, 1986) and deficits in social competence have been recognised as a defining characteristic of learning disabilities (Lukasson et al, 1992). It may be hypothesised that the social communication deficits demonstrated by many people with mild learning disabilities, will interfere with the reconstruction and rehearsal of life events that is necessary for autobiographical memory formation, and lead to autobiographical memory impairment.

Emotion recognition problems may be a factor contributing to poor social relatedness amongst people with learning disabilities. Ekman and Friesen (1975) identified six basic emotions (happy, sad, angry, disgust, fear and surprise) that, cross-culturally, most people who do not have learning disabilities learn by the time they reach adulthood. Although it has been reported that people with mild learning disabilities consistently identify the emotions 'happy' and 'sad' (Simon et al, 1995; Reed and Clements, 1989), this client group struggle globally with recognising, encoding, regulating and expressing emotion. (Rojahn and Rabold, 1995; McAlpine, Kendal and Singh, 1991). Accuracy of facial emotion recognition is reported to improve with increasing IQ levels (McAlpine, Kendal and Singh, 1991; Gray, Fraser and Leudar, 1983), especially verbal abilities (Simon et al, 1995 ; Reed and Clements, 1989). Impairment or maladjustment in social

relationships is also highly related to verbal ability (Cantwell, Baker and Mattison, 1980). Impaired interpersonal skills and verbal abilities, poor self-concept, and difficulties with emotion recognition and regulation, may influence encoding, storage and retrieval of autobiographical information. These deficits may deplete the range of life experience available to the individual and restrict the information that can be integrated into autobiographical memory.

Problem Solving and Depression

Memory deficits demonstrated by people with learning disabilities have implications for problem solving, in that the activation of information in long-term memory, followed by temporary storage and manipulation of information in short-term memory will be impaired (Ferretti and Cavalier, 1991). People with learning disabilities frequently struggle with day-to-day problem solving (Evans, 1998) and have been described as passive in situations that call for active solutions (Ferretti, 1994). The possibility is raised that this may be linked with difficulties generating specific autobiographical memories, that is, difficulties drawing on specific information from previous experience, for application to the current problem-solving situation.

Failure to achieve social competence may prove a risk factor for emotional vulnerability (Rojahn and Rabold, 1995), contributing to enhanced risk for mental health problems (Rojahn, Lederer and Tassé, 1995). In addition, poorly developed self-concept may also contribute to mental health problems experienced by people with learning disabilities: a significant negative correlation between self-report measures of self-concept and depression has been reported with participants with mild-moderate intellectual impairment (Benson and Ivins, 1992). It is well documented that this client group are more susceptible than the general population to affective disorders like depression (Moss et al, 1997; Reed, 1997). It has been forwarded that many of the cognitive processes known to mediate these problems are common to people with and without

learning disabilities (Clements, 1997; Nezu et al, 1995). Prevalence for depression amongst people with learning disabilities has been estimated between 1.6%-39.6% (Patel, Goldberg and Moss, 1993; Reiss and Benson, 1985; Matson, 1983) and it has been suggested that affective disorders remain under-diagnosed (Reiss and Benson, 1985). Psychiatric comorbidity further complicates an individual's intellectual disability by compromising, to an even greater extent, their ability to meet with the daily challenges life presents (Driessen, DuMoulin and van Os, 1997). It may be that the link between depression and poor social problem-solving skills in this client group (demonstrated by Helsel and Matson, 1988) is related to poor autobiographical memory specificity, as with people without learning disabilities.

The Importance of Investigating Autobiographical Memory in People with Learning Disabilities

Investigating autobiographical memory with this client group holds the potential to provide valuable information concerning the extent to which people can access and be specific about life events. Clements (1997) highlights the need for improved assessment techniques for the problems that people with learning disabilities may experience when accessing and interpreting information. Clements continues that the growing practise of cognitive intervention has tended to run ahead of assessment, and questions remain regarding how a clinician is to determine individual suitability for psychological therapies, like CBT (Dagnan, Chadwick and Proudlove, in press). To further our understanding and fuel development in use of CBT with people with learning disabilities, it is important for assessment methods to catch up with methods of intervention.

Dagnan, Chadwick and Proudlove (in press) have suggested that the most immediate skill in the therapeutic process is for the person to identify and acknowledge an

emotional state and link this state with a past life event, before identifying mediating cognition. The ability to access emotions within the therapeutic session has been described as an important element in the process of accessing automatic thoughts (Muran, 1991). Autobiographical memory assessment essentially requires an individual to make such a link between a cued emotion and a past life event. The potential use of autobiographical memory assessment to assess the quality of autobiographical recall that could be monopolised in therapy, is worthy of consideration and underscores the need to research autobiographical memory assessment in this client group.

Atkinson and Walmsley (1999) and Ingham (2000) have argued that autobiographical life review is one way a person can make sense of their life and consolidate self-identity. This is supported by Barclay and Smith (1993) who have suggested that “a sense of self can be instantaneously experienced directly through an improvisational process of self-composition in autobiographical remembering and interacting,” (pp. 231). Autobiography has been used therapeutically with people who have mild learning disabilities, to explore and help consolidate self-concept and give a voice to those who have traditionally been kept silent through segregation (Atkinson and Walmsley, 1999). The reported success of autobiographical life review supports that people with learning disabilities have the capacity to recall autobiographical detail sufficient to compose a life history or certainly aspects of a life history. This work is an encouraging indication that people with learning disabilities may cope with more formal assessment of autobiographical memory for the purposes of investigating its potential role in the difficulties faced by individuals with learning disabilities.

Figure 1 summarises the important role of autobiographical memory in the areas discussed above, along with some of the factors potentially affecting the formation and retrieval of autobiographical events.

INSERT FIGURE 1 HERE

How Might Autobiographical Memory be Assessed in People with Learning Disabilities?

Cued recall of autobiographical information has been used extensively in investigations with the general population. No published work has addressed this issue in people with learning disabilities, suggesting autobiographical assessment by cued recall would seem to be the most logical starting point. It is anticipated that individuals with moderate to severe learning disabilities would not be suited for autobiographical memory assessment using this method, given the limited verbal comprehension and production abilities they may possess. Individuals with mild learning disabilities are more likely to understand and respond to this type of assessment in relation to their level of cognitive functioning. Experiments using cued recall have involved presenting the participant with a cue word written on a card, with instruction to recall a specific life event that the word reminds them about (Williams and Scott, 1988). This method of assessment may lack salience for someone with a mild learning disability who has limited reading skills and it may be worth attempting to explore other more meaningful ways of presenting cue words for autobiographical assessment to facilitate autobiographical retrieval.

Facilitation of Task Performance by Pictorial Cues

Bebko and Luhaorg (1998) have reported that the more effortful and language-loaded a memory task, the greater the difficulty people with a learning disability are likely to experience and the poorer their performance will be. Performance deficits on tasks that required primarily verbal encoding strategies were reduced when tasks amenable to non-

verbal strategies (for example, pictorial representations), were presented. Pictorial stimuli have also been used to promote memory performance in people with severe intellectual impairment (Lancioni et al, 1999; Wilkinson, Ronski and Sevcik, 1994). Sigelman and Budd (1986) have commented on the usefulness of pictures as an aid in interviewing and assessing people with learning disabilities. They have suggested that the use of pictures in conjunction with questions may help keep the information in short term memory, while the individual searches for an answer. Sigelman and Budd (1986) have concluded that the potential of pictures is worth exploring further in both formal and informal assessment situations. Pictorial representation of emotions may therefore be less difficult for an individual to process than when given a verbal cue only, as the latter may require additional processing and identification before searching for a related event in memory.

In light of the evidence discussed, it is argued that supplementing cue words with a picture may enhance autobiographical retrieval, in comparison to presentation of cue words alone. The finding that pictures give rise to better memory performance than do words is long established (Dewhurst and Conway, 1994). Although, Dewhurst and Conway (1994) refer to participants without learning disabilities, it is possible that this applies to people with learning disabilities to an even greater extent, given the verbal production and comprehension difficulties exhibited by this group. Autobiographical memory in people with learning disabilities is deserving of further investigation. This might include a comparison study of autobiographical assessments using verbal cues alone, versus verbal cues supplemented with pictures.

Conclusions: Clinical Utility of Autobiographical Memory Assessment of People with Mild Learning Disabilities

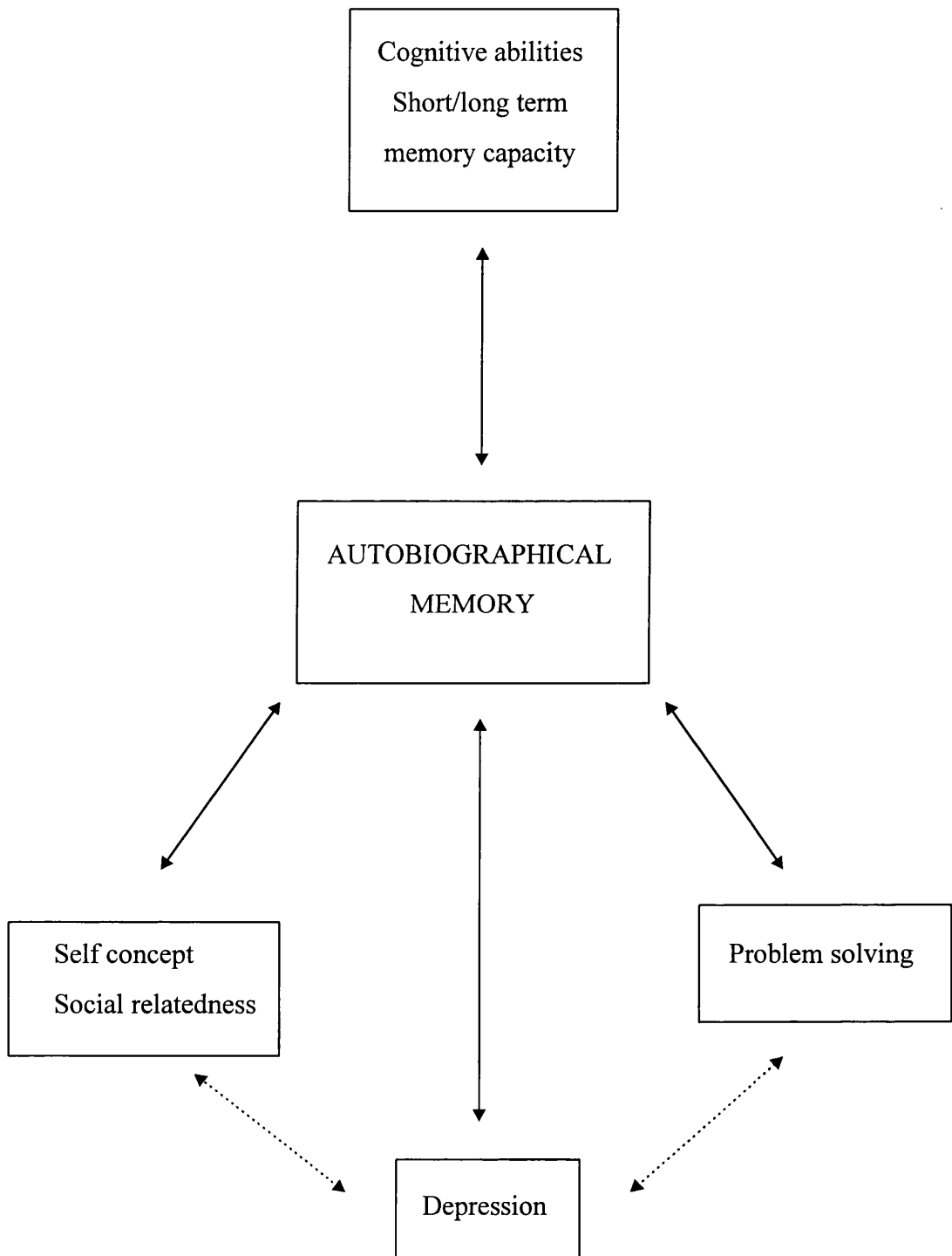
The investigation of autobiographical memory assessment in people with learning disabilities brings together a number of important areas of research with this client group: self-concept, emotion recognition, social relatedness, problem-solving, dual diagnosis, general memory processes, autobiographical reminiscence and the application of cognitive-behavioural techniques for psychological problems.

Autobiographical memory assessment may be a useful means of establishing a person's ability to access relevant emotional memories and the quality of these memories for use in therapy. It is evident that some individuals within this client group are able to benefit from psychological therapies, specifically, CBT (Kroese, Dagnan and Loumidis, 1997). Awareness and differentiation of emotions has been highlighted as an important area to assess when considering individuals with intellectual impairment for cognitive intervention (Dagnan and Chadwick, 1997). The potential exists that skills of emotion recognition and linking emotion to events can be enhanced through instruction and directed use of techniques employed in psychological therapies. Stewart and Singh (1995) used directed rehearsal to teach boys with mild-moderate learning disabilities to recognise and produce facial expressions of Ekman and Feisen's (1976) six basic emotions. Eighty-five percent accuracy was maintained at eight and twelve week follow-up. This suggests that people with learning disabilities can be taught skills of emotion recognition. Similarly individuals with learning disabilities can be trained in memory enhancement tasks (Baldi, 1998; Bray et al, 1994).

The study of autobiographical memory would seem to provide a link between the areas of training in memory strategies and emotion recognition in people with mild-moderate learning disabilities. The fact that people with learning disabilities can be helped to improve the way they encode, store and retrieve information in experimental situations

(Baldi, 1998; Bray et al, 1994), has positive implications for the use of CBT with this client group. It has already been suggested from research with people without learning disabilities that life review in the process of CBT may help improve encoding of autobiographical information, which improves depressive symptoms by improving the availability of autobiographical information to refute negative cognition (Brittlebank et al, 1993). Might this also be the case with people who have mild learning disabilities? In addition might changes in the quality of an individual's autobiographical memory (that is, their ability to recall specific past life events) be an indicator of therapeutic progress made with the use of techniques like CBT? Also meriting consideration is the use of autobiographical reminiscence (Atkinson and Walmsley, 1999; Atkinson, 1997) to help encode and rehearse life events and potentially enhance autobiographical recall for use in problem solving, social cognition and consolidation of self-concept. The feasibility of autobiographical assessment with people with learning disabilities, and exploration of the quality of autobiographical recall would seem to be an important starting point for directing the course of future investigation in these areas.

Figure 1. Summary of the role of autobiographical memory and the factors potentially influencing storage and retrieval of autobiographical events



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Major Project Research Proposal

**AN INVESTIGATION INTO AUTOBIOGRAPHICAL MEMORY
ASSESSMENT IN PEOPLE WITH MILD LEARNING DISABILITIES**

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Introduction

Autobiographical memory is memory for events or episodes from one's life (Brewer, 1986; Groninger and Groninger, 1984). Storing and retrieving autobiographical information accesses general memory processes (Baddeley, 1992), and is subject to the same influences as memory for other types of material, for example, rehearsal and recall, ageing and cognitive change (Holland, 1992; Rubin, 1982). To date, there is no published research addressing assessment of the quality (specificity) of autobiographical memory in people with learning disabilities. However, recent work has discussed the use of autobiography and life story as a therapeutic focus for this client group (Atkinson and Walmsley, 1999; Atkinson, 1997).

Global memory deficits are among the most frequently demonstrated psychological consequences of a learning disability (Swanson and Trahan, 1990). Quality of memory tends to be a function of intellectual ability (McDaniel et al, 1998; Turner et al, 1996; Winters and Semchuck, 1986) and research with non-learning disabled participants suggests that the quality of autobiographical memory (in terms of specificity of response) decreases with reduced cognitive functioning (Phillips and Williams, 1996; Holland, 1992; Holland and Rabbit, 1990). On this basis, it may be argued that people with learning disabilities, (and, by definition, with reduced cognitive functioning), will demonstrate poor autobiographical memory specificity, that is, they may demonstrate difficulties generating specific memories for autobiographical detail.

Theoretical Basis for this Investigation

Assessment of Autobiographical Memory in Clinical Populations Without Learning Disabilities

A popular method of autobiographical memory assessment involves the presentation of individual cue words with instructions for the participant to recall a related, specific personal memory. Cue words have included emotions and non-emotions (for example, refer to McNally et al, 1994; Williams and Dritchel, 1988; Robinson, 1976). The quality of autobiographical memory is assessed in terms of specificity of the memory (that is, whether the memory represents a discreet specific event in time versus a composite of memories blended together), and response latency (time taken to respond to the cue word). Checking memory accuracy is not typically part of the assessment procedure because autobiographical remembering is embedded in affective, interpersonal, sociocultural and historical contexts (Barclay, 1996) and is subject to change over time (Barclay and Smith, 1993). Research has been concerned mainly with *how* episodes are remembered (that is, specific recall versus general recall) and considers memory content from the perspective of the rememberer (Schooler and Herman, 1992).

The most consistent findings concerning response specificity support the argument that impaired cognitive functioning hinders the search for a specific autobiographical memory, including research with older adults (Phillips and Williams, 1997; Rabbitt and Winthorpe, 1988) and depressed populations (Williams, 1996; Williams et al, 1996; Kuyken and Dalgleish, 1995; Brittlebank et al, 1993; Moore et al, 1988; Williams and Broadbent, 1986; Williams and Dritchel, 1986). Both groups have been shown to demonstrate less specific autobiographical memory compared to controls. On the whole, there seems to be a tendency for individuals (clinical and non-clinical populations) to more readily recall emotional material versus non-emotional material (Bogue, 1997; McNally et al, 1994). The ability to recall a range of specific events

from their past, particularly emotional experiences, is thought to promote an emotionally varied internal world and sensitivity to the emotions of others (Schulster, 1995). Autobiographical memory therefore plays an important part in the individual's emotion regulation and the ability to identify with others' emotions (Barclay and Smith, 1993).

Emotion Recognition in People with Learning Disabilities

Difficulties recognising, encoding, regulating and expressing emotion have been consistently identified in people with learning disabilities (Rojahn and Rabold, 1995; McAlpine, Kendal and Singh, 1991). Accurate emotion recognition is important for successful integration into social groups and for learning and memory that is based on social interaction and its outcome (Rojahn and Rabold, 1995). Deficits in social competence are defining characteristics of having a learning disability (Luckasson et al, 1992). It might be hypothesised that these difficulties with emotion recognition and subsequent social relatedness may be linked with poor autobiographical memory specificity. An exploration into the specificity of autobiographical recall for emotional material may therefore be merited with people who have learning disabilities.

The Use of Pictorial Stimuli to Enhance Task Performance in People with Learning Disabilities

To facilitate task performance in people with a range of intellectual impairment, pictorial cues have been effectively used (Lancioni et al, 1999; Wilkinson, Ronski and Sevcik, 1994). Bebko and Luhaorg (1998) have reported that the more language-loaded a memory task, the greater the difficulty people with a learning disability are likely to experience and the poorer their performance will be. It has been suggested that the use of pictures, in conjunction with verbal communication, may help people with learning disabilities keep the relevant information in short term memory while searching for an

appropriate response (Sigelman and Budd, 1986). Pictorial representations of emotions may therefore be more readily processed than verbal cues alone, as the latter would require additional processing and identification before searching for a related event in memory. Sigelman and Budd (1986) have concluded that the use of pictures in assessment situations is worth exploring further. In light of the research, it might be hypothesised that pictorially presented cues may enhance autobiographical memory specificity, in comparison to recall prompted by verbal cues alone.

Clinical Utility of this Investigation

Autobiographical Memory, Cognitive Behaviour Therapy (CBT) for Depression and People with Learning Disabilities

People with learning disabilities are vulnerable to mental health problems like depression, with prevalence estimated up to 40% (Matson, 1983). To address the mental health concerns of this client group the Cognitive Behavioural approach has been considered (Kroesel, Dagnan and Loumidis, 1997). However, Clements (1997) highlights the need for improved assessment techniques for the problems that people with learning disabilities may experience when accessing and interpreting information during this therapeutic process. According to Beck's model of depression (Beck et al, 1979) negative schemata are the root of biases in information processing which encourage attenuation to negative memories, at the cost of positive recollections. Therefore, depressed individuals have restricted access to their memory 'database', resulting in impaired ability to draw from memory and generate effective strategies to presenting problems (Evans et al, 1992; Goddard, Dritschel and Burton, 1997). Failure to produce specific autobiographical memories is thought to be a trait marker of vulnerability to persistent depression (Brittlebank et al, 1993). It is argued that CBT task assignments, like diary keeping, may be valuable in improving autobiographical memory through encouraging more specific encoding of current events (Brittlebank et

al, 1993). Thus, increasing the amount of specific autobiographical material the person can use to refute negatively biased cognition, and improve problem-solving (Evans et al, 1992). Compromised short- and long-term memory (Ferretti and Cavalier, 1991; Boyd and Ellis, 1986) in people with learning disabilities may contribute to restrict the memory database and influence schema formation, associated cognition, and problem-solving. People with learning disabilities frequently struggle with day-to-day problem-solving (Evans, 1998) and it may be that this is linked with poor autobiographical memory.

Dagnan, Chadwick and Proudlove, (in press) have suggested that the most immediate skill in a cognitive behavioural therapeutic process is for the person to identify and acknowledge an emotional state and attempt to link this state with a past life event. This is essentially what the autobiographical memory test requires of individuals, that is, recognition of an emotion or non-emotion cue word and linking this with a previous life experience. The potential use of autobiographical memory assessment to explore suitability of individuals with learning disabilities for CBT and other psychological therapies would seem to be an interesting idea and underscores the need to research this area.

Autobiographical Memory, Self-concept and Autobiographical Life Story with People with Learning Disabilities

Autobiographical memory is reconstructed and shared with others through language (Fivush, Haden and Reese, 1996) and has a role in conceptualising the self (Brewer, 1986). Individuals with learning disabilities have a particularly negative self-concept (Evans, 1998; Reed, 1997) and a number of salient issues may contribute to this, including comparatively greater exposure to negative experiences like failure, stigmatisation and social rejection (Reed, 1997) compared to many individuals without learning disabilities. Compromised verbal ability and limited available social support

(Krauss et al, 1992). will constrain the extent to which a person can share their experience and receive validation from significant others. These factors, coupled with impaired memory, probably contribute significantly to affect both autobiographical memory content and access, and subsequent self-conceptualisation. An interesting question concerns the role that autobiographical memory specificity might play in the formation and preservation of self-concept in people with learning disabilities.

The importance of sharing life experience in the development of autobiographical memory (Welsh-Ross, 1995) points to the significance of life story work with people with learning disabilities. Potentially, this process would replicate and help reinstate personal memories through social interaction with carers, thus consolidating autobiographical memory and encouraging the development of self-concept. Atkinson and Walmsley (1999) have contended that the use of autobiography in people with learning disabilities is one way through which a person can make sense of their life and consolidate self-identity. Establishing the level of autobiographical memory specificity this group can achieve is important to inform this type of therapy, by highlighting difficulties with reminiscence that individuals may experience.

The Importance of Investigating Autobiographical Memory Assessment in People with Learning Disabilities

This area of investigation will provide valuable information concerning the extent to which people can access and be specific about life events. Such assessment may be a useful means of estimating a person's ability to recognise and access relevant emotional memories and the quality of these memories for use in psychological therapies. Before the role and function of autobiographical memory can be addressed specifically in the areas discussed it is necessary to first investigate the feasibility of autobiographical assessment with this client group. It is proposed to compare two versions of an

autobiographical memory cueing test: an existing method of autobiographical memory assessment and a method adapted specifically for this investigation. Both versions of the test will use the same set of 12 cue words, comprising emotions and non-emotions. In keeping with the procedure used by other investigators (for example, Wilhelm et al, 1997; Williams and Dritchel, 1988; Williams and Broadbent, 1986) participants' responses will be categorised and scored according to whether the memory is specific, general or an omission (non-response), and response specificity and latency (the time taken to begin to respond with a memory) will be recorded. Response differences between cue word types and between the two versions of the test will be statistically examined.

Aims of Investigation

(I) To pilot the assessment of autobiographical memory with a sample of individuals who have mild learning disabilities; (II) To explore differences in individuals' responses to two versions of autobiographical memory assessment, and establish whether standard techniques are sufficient for assessing this aspect of memory or, if an adapted version will facilitate more specific autobiographical recall with this client group.

Research Questions

- (I) What is the specificity of autobiographical memory demonstrated by people with mild learning disabilities?
- (II) Will there be a difference in participants' responses to an adapted version of the autobiographical memory assessment that employs pictorial cues with verbal cues,

compared to a well-established version of the assessment that uses verbal and written cues?

(III) Do people with learning disabilities respond more readily and specifically to one type of cue over another, that is, emotion words versus non-emotion words?

Hypothesis

When autobiographical memory in people with mild learning disabilities is assessed using a modified version of the autobiographical memory test (that is, pictorial with verbal presentation of cue words) participants will demonstrate superior response specificity than when presented with a version of the test that employs written and verbal presentation of cue words.

Plan of Investigation

Participants

Participants will be recruited through community learning disability services and adult resource centres within the Greater Glasgow area. Participants will incorporate individuals receiving adult learning disability services, whose IQ is assessed as within approximately one standard deviation of the Wechsler Adult Intelligence Scale-Revised (WAIS-R; Wechsler, 1981) cutoff IQ score (IQ=69; SD = 15) for a diagnosis of mental retardation. Clients assessed within this IQ range are anticipated to exhibit a level of verbal comprehension and production that will enable them to respond to the demands of autobiographical memory assessment. In addition, individuals of this level of ability are the primary recipients (among this client group) of psychological therapies like CBT and autobiographical life review.

A minimum of 22 participants will be recruited. Sample size is based on a calculation of statistical power using data from, what was deemed to be, the most closely comparable and available study: Williams et al, (1996). The calculation was completed by submitting the relevant data to a UCLA website power calculator (website address: www.stat.ucla.edu/calculators/powercalc/). The data for a one-sample calculation, comparing response specificity for emotion cues versus non-emotion cues, was as follows: mean specificity score for emotion cues = 3.88 and for non-emotion cues = 4.38. Standard deviation = 0.99. An estimated sample of 21 was given for a power size of 0.7 and significance level of 0.05.

Key-workers or others working with prospective participants will be approached to elicit their cooperation with the investigation. The purpose and procedure of the study will be explained and the key-worker asked to identify one or more of their clients that they believe might fit the criteria for inclusion in the investigation. Key-workers will complete the Psychiatric Assessment Schedule for Adults with a Developmental Disability-Checklist (PAS-ADD; Prosser et al, 1998), to ascertain the mental health status of the proposed individuals. Participants who are currently depressed will be excluded, in light of findings that depression can interfere with the specificity of autobiographical memory (Williams, 1996; Kuyken and Dalgleish, 1995; Brittlebank et al, 1993; Moore et al, 1988; Williams and Dritchel, 1988; Williams and Broadbent, 1986). Those with a history of depression but not currently depressed have also been shown to demonstrate poorer autobiographical memory specificity in comparison to counterparts who have never been depressed (Brittlebank et al, 1993). Past episodes of depression will exclude an individual from participating, and will be identified from information given by key-workers or reference to client records. In the event of this information being unavailable, inclusion in the study will necessarily rely on current mental health status. Finally, IQ assessment using a pro-rated form of the WAIS-R (Wechsler, 1981), will estimate individuals' intellectual ability and subsequent eligibility for inclusion.

Measures

(I) The Psychiatric Assessment Schedule for Adults with a Developmental Disability (PAS-ADD) Checklist

The PAS-ADD Checklist (Prosser et al, 1998), was designed to screen the mental health status of people with a learning disability and has well established properties of reliability and validity (Moss et al, 1998).

(II) Wechsler Adult Intelligence Scale-Revised

The WAIS-R (Wechsler, 1981) will be administered to provide a global estimate of individuals' intellectual functioning and confirm eligibility for inclusion in the study. To minimise administration time a pro-rated version of seven sub-tests will be administered. This version has been established as a reliable and valid substitute for a full WAIS-R (Abraham et al, 1997; Ward, 1990).

(III) Autobiographical Memory Test

Assessment of autobiographical memory does not employ a published, standardised test. Researchers, however, have adopted similar approaches to the presentation of cue words, usually by replicating the procedure from an earlier study (for example, Wilhelm et al, 1997; Williams, 1996; Kuyken and Dalgleish, 1995; Brittlebank et al, 1993; Moore et al, 1988; Williams and Dritchel, 1988; Williams and Broadbent, 1986). A range of different cue words have been used across studies. Version 1 of the autobiographical memory test to be administered, replicates the format used by the authors cited above and employs verbal and written presentation of cue words to elicit memories from participants. Version 2 will follow a similar format but, being adapted specifically for this investigation, will use pictorial representations of the cue words

rather than a written form. It is anticipated that a difference in participants' responses to the two versions of the test will be demonstrated.

The same set of cue words will be used for both versions of the test: six emotion words and six non-emotion words. Differences in participants' responses to the two cue types will be explored. The emotion words will comprise six, cross-culturally common, emotions (Ekman and Freisen, 1975): Happy, Sad, Angry, Disgusted, Scared, Surprised. A range of black and white photographs of facial expressions of these emotions have been published (Ekman, 1976), which have been used extensively in emotion recognition research with people with learning disabilities (Rojahn et al, 1995). The photographs will be employed in Version 2, whilst Version 1 will involve only verbal and written presentation of the cue words (each word printed separately on a 28 x 22 cm card; Brittlebank et al, 1993). Nine non-emotion cues (three of which will be used as practice cues), appropriate for the participant group, will be selected from a pool of words by clinicians with experience in learning disabilities services (Appendix 2). The words include those used in previous autobiographical memory investigations (John, 1988, Anderson, 1968; Paivio, Yuille and Madigan, 1968; Heise, 1965) and others selected from the original word lists cited in these studies. It is anticipated that selecting words in this way will not compromise the validity of the assessment as a wide variety of cues has been used between different studies. Two non-emotion practice words will introduce participants to the procedure (Wilhelm et al, 1997; McNally et al, 1995). Black and white photographs will be prepared for the non-emotion and practice cues. All cues in both versions of the test will be presented in a random sequence.

Design and Procedure

Time will be taken at the outset to explain the procedure and purpose of the experiment. Each participant will receive a handout explaining the purposes of the study and thanking them for their participation (to read themselves or to be read with them by a significant other). It will be made clear that, at any point in the proceedings, participants can chose not to continue. Participants will sign a consent form, witnessed by a third party. Assessments will be administered over two testing sessions. Completion of assessments will be counterbalanced, that is, half the participants will first complete Version 1 followed by Version 2, and vice versa for the remaining half. This is to ensure that any differences in the specificity of autobiographical recall between conditions is due mainly to the manipulation of experimental stimuli, and not simply practice effects.

Participant instructions for the autobiographical memory test are taken from Wilhelm et al (1997) and will be simplified to facilitate participants' comprehension. Changes to the instructions will be validated by, again, consulting practicing clinicians. Participants will be asked to repeat back their understanding of the procedure to ensure they have grasped the requirements of the study.

In previous studies participants have been given unlimited response time to retrieve a specific memory for practice cues, and a limit of 60 seconds for experimental cues. It is likely that some participants may be incapable of producing specific responses, so a time limit of 180 seconds will be allowed to respond to each cue. It is anticipated that this will provide sufficient time to generate a specific memory if the person is able. A specific memory is defined as a discrete episode that happened to the participant and lasting no longer than one day (Williams and Dritschel, 1988; Wilhelm et al, 1997). If participants respond with a memory that is not specific, (that is, a composite of memories referring to a time period longer than one day) they will be prompted as

follows: 'Can you tell me more about that?' (Cimino et al, 1991) or, 'Can you tell me more about the day when this happened?' or, 'Can you think of one specific time, does a particular event come to mind?' (Wilhelm et al, 1997). If, after instruction, the participant fails to respond with any memory, the instructions will be repeated. After the 180 second time limit the next word will be presented. Failure to respond with any memory within the time limit will be recorded as an 'omission.'

The first session will include a general introduction to the investigation after which the pro-rated WAIS-R will be administered. The participant will then take a 15 minute break, during which time the researcher will score the pro-rated WAIS-R. If the participant fulfills the inclusion criteria, they will be asked if they would like to continue with the experiment and, if amenable, the relevant version of the autobiographical memory test will be administered. If not meeting the inclusion criterion (IQ approximately within the range 55-75) the participant will be thanked for their participation. It will be explained that their participation was helpful to the researcher and that further encroachment on their time is not necessary. The WAIS-R alone is expected to be completed within 20 minutes with up to 50 minutes required for the autobiographical memory assessment. Session two will occur at least two weeks subsequent to session one, and involves administration of the alternative version of the autobiographical memory assessment. It is anticipated that the two week gap will minimise practice effects and the priming effect of memories produced during administration of the first version of the test. Session two is expected to require up to 55 minutes of the participant's time.

Each session will be audio-taped to allow categorisation and scoring of responses as 'specific', 'general' or 'omission'. The delay between the presentation of the cue word and response with a specific memory will be timed (following Williams and Broadbent, 1986), so that latencies between the two cue types and between test versions may be compared.

The response categories 'specific', 'general', and 'omission' will be assigned category scores of 2, 1 and 0, respectively. Inter-rater agreement for the allocation of memories to the categories as defined will be established by comparing the researcher's scores with those of a colleague who will independently categorise participants' scores. Inter-rater agreement for this categorisation of responses has already been demonstrated as between 87% and 93% (Williams and Broadbent, 1986).

Pending ethical approval, a pilot of this procedure will be conducted with two participants to refine the method described above.

The experimental procedure described above is summarised in Figure 1.

INSERT FIGURE 1 HERE

Data Analyses

Two-way Analysis of Variance (ANOVA) will be used to establish main effects and the interaction between the two independent variables (cue type [emotion/non-emotion] and test version [Version 1/Version 2]) and the dependent variables (response latency and response specificity). This will comprise 2x2 factorial designs (cue types x test versions) to separately analyse latency and specificity. Latency for *first* memory recalled in response to cue word (regardless of whether specific or not) will be analysed and, if sufficient data is generated from participants, latency for specific recall (that is, spontaneous specific recall and specific recall after prompting). The percentage of specific responses given will be used for the two-way ANOVA calculation. Thus the

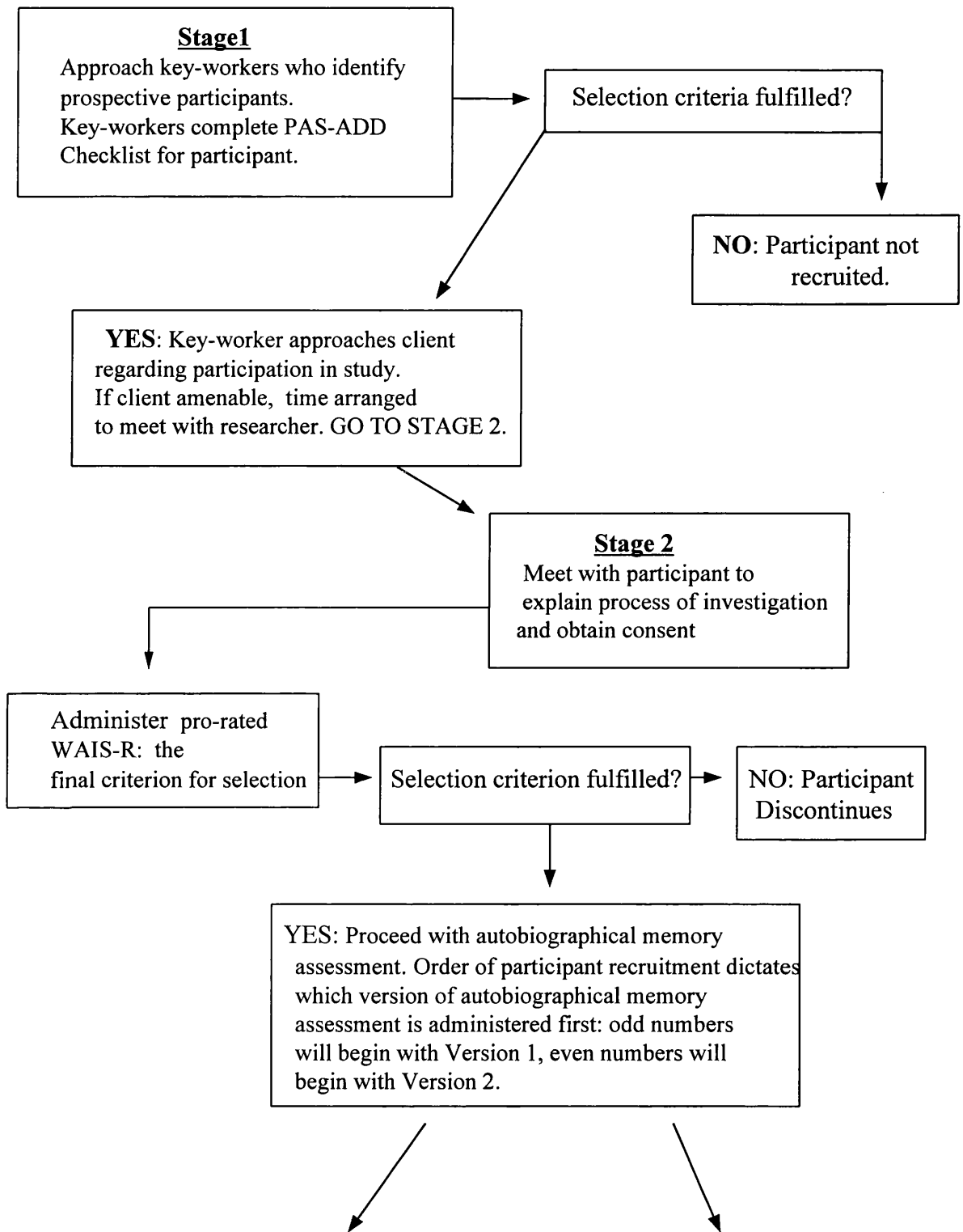
main effect of one independent variable over another, and the interaction or joint effect of the two independent variables will be determined.

Summary

This investigation hopes to explore the extent to which people with mild learning disabilities can access and specifically recall autobiographical memory for emotion cues and non-emotion cues. Assessment of autobiographical memory may be a valuable pre- and post-treatment indicator of accessibility to positive memories in response to CBT. Cognitive behavioural techniques are thought to encourage more specific encoding of current events, which increases the amount of specific autobiographical material the person can use to help refute negatively biased cognition, improve problem solving (Evans et al, 1992) and, ultimately, self-concept.

Autobiographical reminiscence and life story work has been successfully used as a therapeutic technique to encourage self-identity, self-promotion and empowerment of this, extremely disempowered, group. Assessment of autobiographical memory specificity in people with learning disabilities is important to inform this type of therapy, by highlighting difficulties with reminiscence that individuals may experience. It is anticipated that the results will have implications for future research, by highlighting the need to investigate autobiographical memory deficits in people with learning disabilities, and how these may be associated with the problems faced by this population: problems including poor self-concept, emotion-recognition, social relatedness, problem-solving and depression.

Figure 1. Summary of experimental procedure



Continued on next page...

Figure 1. Summary of experimental procedure continued...

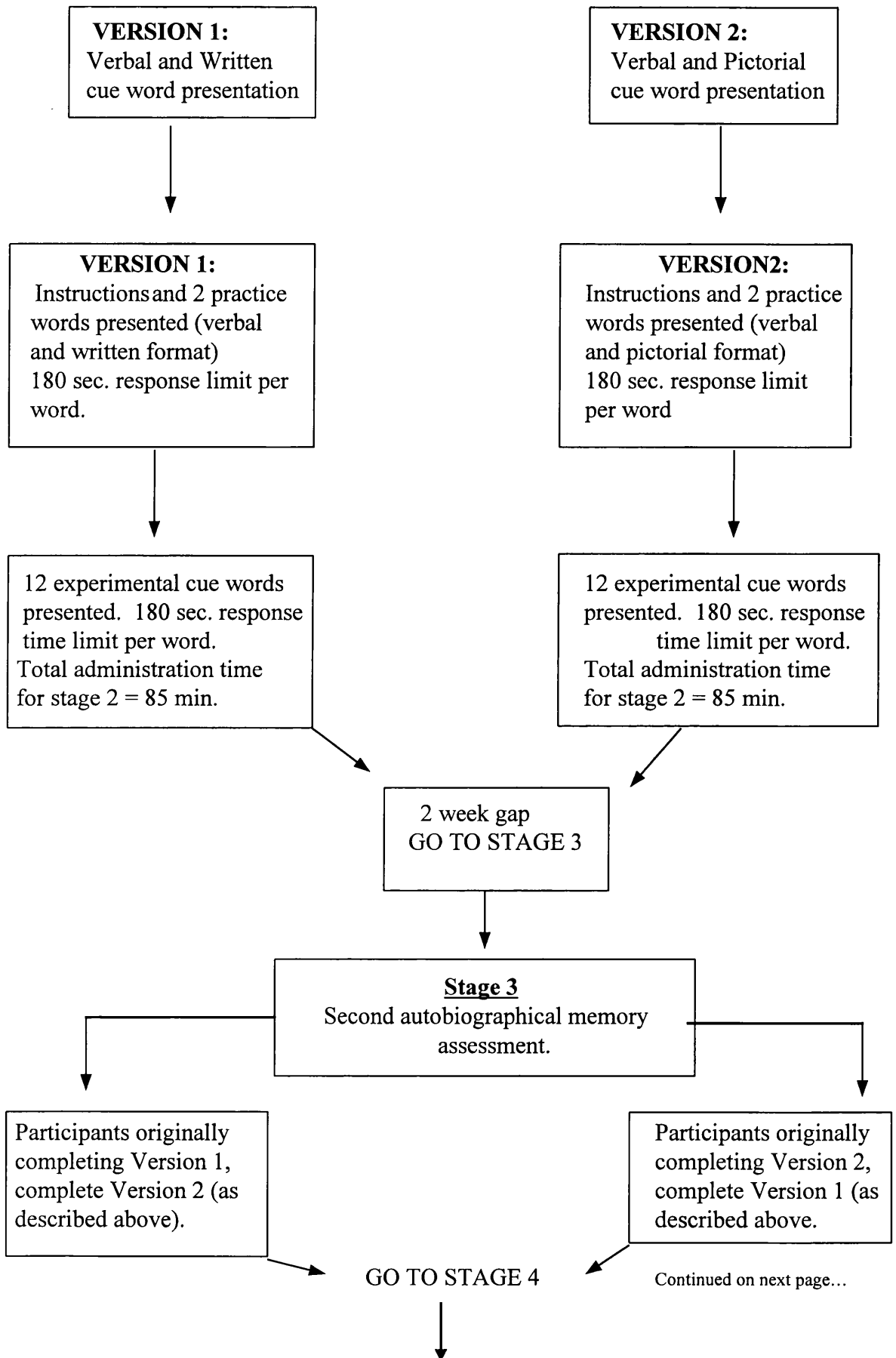
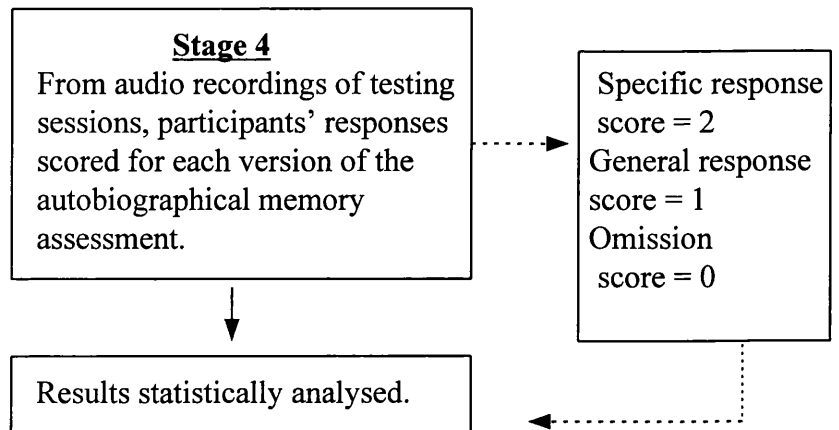


Figure 1. Summary of experimental procedure continued...



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Major Project Paper

**AN INVESTIGATION INTO AUTOBIOGRAPHICAL MEMORY
ASSESSMENT IN PEOPLE WITH MILD MENTAL RETARDATION**

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Target Journal: *American Journal on Mental Retardation*

(See Appendix 3.1)

ABSTRACT

There is currently no published research investigating the assessment or role of autobiographical memory in people with mild mental retardation. In people with average intelligence autobiographical memory deficits have been linked with poor problem-solving skills and depression, both of which are experienced by people with mild mental retardation. Using a repeated measures cross-over design, twenty-two participants were assessed using a standard method of autobiographical memory assessment and a pictorial method adapted specifically for the investigation. A significant finding was that participants were able to recall specific autobiographical memories, although memory retrieval was not enhanced by the pictorial method as hypothesized. There were no significant differences in autobiographical retrieval for the emotion or non-emotion cue words used. This is a promising area of new research and findings are discussed with recommendations for future investigation.

INTRODUCTION

Memory for past life events is termed autobiographical memory (Brewer, 1986; Groninger & Groninger, 1984). Research with people with average intelligence has reported that autobiographical memory is important in a number of areas of psychological functioning, including problem-solving and depression (for review see Roy, 2000). Links between poor retrieval of specific autobiographical events and depression have been consistently highlighted (Williams & Broadbent, 1986, and for review, Williams, 1996).

Beck's model of depression (Beck, Rush, Shaw & Emery, 1979) proposes that negative schemata are rooted in information processing biases that encourage attention to negative life events and cognition, at the cost of positive recollections. Thus, people with depression poorly encode everyday life events (Evans, Williams, O'Loughlin & Howells, 1992), and information that is congruent with their mood state is disproportionately selected for memory storage (Mathews, 1997). Information-processing biases and poor encoding of events contribute to reduce the information available in the autobiographical memory 'database,' which inhibits "reinterpretation and reschematization of the past" (Williams, 1996, pp. 277). Evidence has consistently supported that depressed individuals demonstrate less specific recall for emotion-related autobiographical memories, than those who are not depressed (Williams, Ellis, Tyers, Healy, Rose, & MacLeod, 1996; Williams, Hely & Ellis, 1996; Kuyken & Dalgleish, 1995; Dalgleish & Watts, 1990; Moore, Watts & Williams, 1988; Williams & Broadbent, 1986). Poor recall of specific life events is considered to play a role in the poor problem-solving skills demonstrated by depressed individuals (Goddard, Dritschel & Burton, 1997; Evans et al, 1992; Marx, Williams & Claridge, 1992). Problem-solving deficits interfere with ability

to handle life situations, which increases sense of failure and hopelessness and reinforces depressed thoughts and feelings. Failure to produce specific autobiographical memories has been reported to be highly correlated with failure to recover from depression and subsequently, is thought to be a trait marker of vulnerability to persistent depression (Brittlebank, Scott, Williams & Ferrier, 1993).

Many of the cognitive processes known to mediate mental health problems like depression, for example, negative automatic thoughts, are considered to be common to people with and without mental retardation (Nezu, Nezu, Jami, DelliCarpini & Groag, 1995). Studies have estimated that up to 40% of people with mental retardation suffer from depression and it is recognized that affective disorders are frequently under-diagnosed (Patel, Goldberg & Moss, 1993; Reiss & Benson, 1985; Matson, 1983). People with mental retardation are reported to be at increased risk for developing mental health problems like depression, due to increased experience of failure, rejection and stigmatization (Reed, 1997).

People with mental retardation also experience difficulties with day-to-day problem-solving (Evans, 1998; Luckasson, Coulter, Pollaway, Reiss, & Schalock, 1992; Ferretti & Cavalier, 1991; Helsel & Matson, 1988) and short- and long-term memory deficits (Ferretti & Cavalier, 1991; Swanson & Trahan, 1990; Boyd & Ellis, 1986). Memory deficits have been reported to be directly related to severity of disability (McDaniel, Foster, Compton & Courtney, 1998; Turner, Hale & Borkowski, 1996; Winters & Semchuck, 1986). Similarly, research with older adults, has suggested that the ability to retrieve specific autobiographical memories declines as working memory and general cognitive functioning declines (Winthorpe & Rabbitt, 1988; Phillips & Williams, 1996).

On this basis, it may be argued that people with mental retardation will demonstrate difficulty generating autobiographical memories for specific life events. It may be that poor problem-solving and depression in people with mental retardation is related to poor retrieval of specific autobiographical detail, mirroring that demonstrated in depressed individuals of average intelligence.

There is currently no published research exploring the assessment of autobiographical memory in people with mental retardation and the need for more extensive investigation has been highlighted (Roy, 2000; Turnure, 1991). The successful therapeutic application of autobiographical reminiscence and life story work with this client group (Atkinson & Walmsley, 1999; Atkinson, 1997) suggests that more formal assessment of autobiographical memory may indeed be possible. Before the role of autobiographical memory can be explored, specifically in the areas of depression and problem-solving, it is necessary to investigate how autobiographical memory may be formally assessed in people with mental retardation.

Commonly, autobiographical memory assessment involves verbal presentation of a series of words printed on cue cards, for example, 'happy,' or, 'surprised,' and the participant is instructed to recall a life event triggered by the word (Williams & Broadbent, 1986). The quality of autobiographical memory is assessed in terms of response specificity, that is, whether the memory represents a discreet event in time (a specific memory), is a composite of memories blended together (a general memory) or, whether the response is a non-response (response omission) (Phillips & Williams, 1997). Autobiographical memory assessment requires a degree of verbal ability sufficient to understand the demands of the task, encode the cue word presented, conduct a search

through memory for a relevant life event and report this to the experimenter. This task may, therefore, prove too challenging for individuals who exhibit a level of cognitive functioning at the moderate to severe level of mental retardation. In addition, even for individuals with mild mental retardation, a verbal and written cue may have little meaning for someone not proficient at reading.

A verbal cue, supplemented with a picture in place of a written word, may facilitate encoding of the cue word and the subsequent response, more than presentation of a standard procedure that includes verbal and written cues. Pictorial cues have been effectively used to facilitate task performance in people with a range of mental retardation (Lancioni, Van den Hof, Furniss, O'Reilly, & Cunha, 1999; Wilkinson, Ronski & Sevcik, 1994; Sigelman & Budd, 1986) and therefore the use of pictures in assessment situations merits further exploration (Sigelman & Budd, 1986). The present study hypothesizes that participants with mild mental retardation will recall more specific autobiographical memories for a Pictorial Condition of the autobiographical memory assessment, than a Standard Condition (Williams & Broadbent, 1986) that has been used widely with people of average intelligence. Consequently, it is expected that less general responses and response omissions will be produced in the Pictorial Condition compared to the Standard Condition.

People with mental retardation are reported to have difficulties with emotion recognition and perform less well on emotion-focused tasks than non-emotion-focused matched-control tasks (Hobson, Ouston & Lee, 1989a). It has been suggested that the problems recognizing and regulating emotion, observed in this client group, may negatively affect the development of socio-emotional competence (Rojahn, Rabold & Schneider, 1995),

which has been highlighted as an area of difficulty for people with mental retardation (Luckasson, Coulter, Pollaway, Reiss, Schalock, & Snell, et al, 1992). Autobiographical memory research with participants of average intelligence has suggested that there is a tendency for individuals, from clinical and non-clinical groups, to more readily recall emotional material than non-emotional material (Bogue, 1997; McNally, Litz, Prassas, Shin & Weathers, 1994). In light of the emotion recognition deficits displayed by people with mental retardation an opposite trend might be expected. It is therefore of interest to explore differences in autobiographical retrieval for emotional material compared to non-emotional material, to establish if autobiographical response specificity reflects the emotion recognition problems often observed. The second hypothesis predicts that participants will produce less specific responses (and subsequently more general responses and response omissions) for emotion cues than non-emotion cues.

Research with people of average intelligence has examined differences in autobiographical retrieval to both positive and negative emotion words but findings have not been consistent, with some authors reporting more specific recall for positive emotion words (Williams & Dritschel, 1988; Williams & Scott, 1988) and others reporting no significant differences between cue types (Goddard, et al, 1997; Williams et al, 1996). Due to the emotion recognition difficulties experienced by people with mental retardation the emotion cues that will be used in the experiment will comprise those already widely used in emotion recognition research with this client group (Rojahn et al, 1995). That is, the six cross culturally common emotions described by Ekman and Friesen (1975): Happy, Sad, Scared, Surprised, Angry, Disgusted. It is anticipated that autobiographical memory assessment using these basic emotions will enable the responses of participants who, on the whole, may struggle to identify and respond to a

potentially more complex range of negative and positive emotion words used in the research with people of average intelligence. Thus, for the purposes of this experiment responses to the emotion words *per se* are the focus of interest.

Response latency for specific autobiographical memories is another measure of evaluating participants' performance with autobiographical memory assessment. However, findings from research with people of average intelligence have been inconsistent regarding response latency for specific memories, according to different cue types (Bogue, 1997). Some investigators report a significant effect of cue type (Wilhelm, McNally, Baer & Florin, 1997, Evans et al, 1992; Williams & Broadbent, 1986) and others report no significant effect of cue type (Goddard et al, 1997; Kuyken & Dalgleish, 1995). It has been suggested that response latency is perhaps a less clinically significant phenomenon than response specificity, for which more consistent results are reported (Bogue, 1997). However, in keeping with the procedure reported by Williams and Broadbent (1986), response latency for specific autobiographical memories will be measured as part of the autobiographical memory assessment procedure in this investigation. In light of the inconsistent findings for people of average intelligence, formal hypotheses regarding response latency have not been made, but differences in response times for the pictorial condition compared to the standard condition and, non-emotion words compared to emotion words, will be explored.

Autobiographical memory functioning is a valid experimental area to investigate with people with mild mental retardation, in view of the potential to further our understanding of the cognitive mechanisms operating in depression and problem-solving within this group. This study investigates how autobiographical memory may be assessed in people

who have mild mental retardation and compares two conditions of an autobiographical memory assessment: the Standard Condition, comprising printed cue words with a verbal prompt (Williams & Broadbent, 1986) and, a method adapted specifically for this investigation, the Pictorial Condition, comprising pictorial cue words with a verbal prompt. Three areas are explored: 1) The differences in response specificity (level of specific and general responses and response omissions) for the Standard Condition of the autobiographical memory assessment compared to the Pictorial Condition of the assessment; 2) The differences in response specificity for emotion words and non-emotion cue words; 3) The differences in response latency for specific memories across the two experimental conditions and cue types.

Ethical approval for this investigation was granted by the Greater Glasgow Primary Care NHS Trust Ethics Approval Committee on 2nd December 1999 (Appendix 3.2).

METHOD

Recruitment of Participants

Participants were recruited from community services for people with mental retardation in the Greater Glasgow area. Prior to recruitment, a key-worker for the prospective participant received an information sheet summarizing the study (Appendix 3.3) and any concerns about the investigation were discussed. To screen for depression, the key-worker completed the Psychiatric Assessment Schedule for Adults with Developmental Disabilities Checklist (PAS-ADD; Prosser, Moss, Costello, Simpson & Patel, 1998). Individuals were excluded if they scored above the threshold for affective disorder or if

the key-worker knew of a previous depressive episode, in light of findings that depression compromises autobiographical retrieval and that this can persist in the months following a depressive episode (Brittlebank et al, 1993; Williams & Dritschel, 1988). Individuals diagnosed with Autistic Spectrum Disorders, were also excluded from participation. Autistic Spectrum Disorders are characterized by specific difficulties with emotion recognition and experience (American Psychiatric Association, 1994), and individuals with this diagnosis may have had particular difficulties with emotion cue words relative to participants without this disorder.

Inclusion in this investigation was restricted to participants aged 16-74 years; the normative age range for the test of intellectual functioning used. Participants were included if their Full Scale IQ was within approximately one standard deviation of the cut-off IQ for a diagnosis of mental retardation ($IQ = 69, SD = 15$), as defined by a pro-rated seven sub-test version of the Wechsler Adult Intelligence Scale-Revised (WAIS-R; Wechsler, 1981). This pro-rated version has been established as a reliable and valid substitute for a full WAIS-R (Abraham, Axelrod & Paolo, 1997; Ward, 1990). It was anticipated that clients functioning at a level much below the cut-off IQ, would be too challenged by the requirements of the autobiographical memory tests. Due to physical disabilities, that prevented completion of the performance sub-tests of the WAIS-R, two participants were included on the basis of their Verbal IQ alone, that was assessed using all the Verbal Scale items for the WAIS-R. Their scores were 71 and 74 IQ points respectively, and the experimenter was confident about their ability to cope with the experimental procedure.

Participants

Twenty two participants (11 women and 11 men) were recruited from community services for individuals with mental retardation in the Greater Glasgow area. The age range was 18 to 65 (mean 34.5 years, $SD = 9.5$). The mean pro-rated Full Scale IQ for participants was 63.6 ($SD = 5.9$), with a range of 54-77 IQ points.

Materials

Autobiographical Memory Tasks

The approach to autobiographical memory assessment developed by Williams and Broadbent (1986) has been adopted in subsequent investigations of autobiographical memory with participants of average intellectual ability. Although the procedure for autobiographical memory assessment has remained consistent between investigations, there has been variation in the cue words used. For the Standard and Pictorial Conditions of the autobiographical memory assessment presented to participants in this investigation, six emotion and six non-emotion cues were used. The emotion cues comprised Ekman and Freisen's (1975) six basic emotions: Happy, Sad, Scared, Surprised, Angry, Disgusted. Pre-experiment pilot work, involving ten clinicians with experience in services for people with mental retardation, was completed to select the non-emotion cues. Previous autobiographical memory research and the original word sources cited in these studies (John, 1988; Anderson, 1968; Paivio, Yuille, & Madigan, 1968; Heise, 1965) were consulted to collate a word pool (Appendix 2). From this, clinicians selected and rank-ordered ten words that they considered would be most readily understood by people with mild mental retardation. From this selection the nine most highly ranked

words were used. The first six comprised the non-emotion experimental cues: Dog, Car, Shop, Baby, Shoes, Jacket. The remaining three words comprised the practice cues, used to introduce participants to the procedure: Letter, Flower, Juice.

Instructions for the autobiographical memory assessments were modeled on the instructions reported by Wilhelm et al (1997), one of the few investigations that included participant instructions in the description of the assessment procedure. The Wilhelm et al (1997) instructions were modified for participants, based on feedback from the ten clinicians participating in the pre-experiment pilot work. (Original instructions: Appendix 3.4.1; adapted instructions: Appendix 3.4.2).

The procedure described below for both the Standard and Pictorial conditions of the autobiographical memory assessments was first piloted with two participants, to ensure that the assessment format was appropriate for individuals with mild mental retardation. There were no significant difficulties observed during this pilot work.

The Standard Condition of the Autobiographical Memory Assessment

The Standard Condition was based on the procedure first described by Williams and Broadbent (1986). Emotion, non-emotion and practice cue words, printed separately on 22 cm x 28 cm laminated cards (Appendix 3.5.1), were presented with a verbal prompt according to the participant instructions included in Appendix 3.4.2. The Williams and Broadbent study did not provide a precise description of the cue cards, thus they were based on the information reported by Brittlebank et al (1993).

The Pictorial Condition of the Autobiographical Memory Assessment

The procedure for the Standard Condition was followed except picture cues were presented instead of the written word. Black and white stills of male and female faces posing the six emotions identified by Ekman and Friesen (1975), have been published by Ekman (1976). From this source, female participants were presented with the six emotions modeled by the same female, and male participants were presented with the six emotions modeled by the same male (Appendix 3.5.2). Ekman and Friesen (1975) have reported that these photographs are standardized so that each facial expression matches a specific criteria for the particular emotion. Thus it is likely that the male and female photographs used for participants were equally representative of the emotion cue words. Black and white photographs depicting the non-emotion experimental and practice cues were prepared by the experimenter (Appendix 3.5.2).

Procedure

Prior to assessment, the experimenter read through an information sheet (Appendix 3.6.1) that explained the procedure to the participant. Participants signed a consent form (Appendix 3.6.2) confirming their understanding of the procedure and their agreement to take part. When literacy or physical disabilities prevented the participant signing the consent form, it was signed on their behalf by a third party designated by the participant. It was stressed to participants that all interviews were confidential and that individuals were under no obligation to disclose information to the experimenter that they preferred to remain private. In addition, it was made clear that participants could stop the assessment at any time.

Participants were assessed either at home or their adult resource center, according to preference. Assessment took place in a quiet room with minimum distractions. To minimize practice or priming effects, there was at least a two week gap between sessions and presentation of the Standard and Pictorial Conditions was counterbalanced: the first participant recruited was presented with the Standard Condition first, the second person recruited completed the Pictorial Condition first, and so on, alternating between participants. The first assessment session lasted approximately 90 minutes, beginning with administration of the pro-rated WAIS-R. This was followed by a break of approximately 15 minutes, permitting the experimenter to calculate the WAIS-R IQ and establish participant eligibility for the autobiographical memory assessment. All participants who were assessed met the inclusion criterion IQ. Existing WAIS-R IQ scores were used for four participants. Following WAIS-R assessment, the first condition of the autobiographical memory assessment was presented. Approximately two weeks later, the remaining condition of the autobiographical memory assessment was presented. This second session lasted up to 45 minutes and was concluded by debriefing participants regarding the purpose of the experiment.

Before the experimental cue words were administered, the three practice cues were presented and participants were asked to explain the procedure in their own words to satisfy that they understood the requirements of the test. The experimental cue words in both conditions of the test were presented in a pseudo-random order: emotion and non-emotion cues were randomly selected by shuffling the cue cards, but presented in an alternate emotion and non-emotion word order. Whether or not an emotion cue or non-emotion cue was presented first, was alternated for each participant. The response time limit was 180 seconds, three times longer than the limit permitted in autobiographical

memory assessment with people of average intelligence, to facilitate the possible delays in information processing experienced by participants. A 'specific' memory was defined as a discrete life episode, lasting no longer than one day (Williams & Dritschel, 1988; Wilhelm et al, 1997). If participants responded with a 'general' memory (a composite of memories referring to a time period longer than one day), three prompts were used: 1) "Can you tell me more about the day when this happened?"; 2) "Can you think of one time from your life; does one event come to mind to do with '...'" (this is a simplified form of a prompt used by Wilhelm et al, 1997, "Can you think of one specific time, does a particular event come to mind?"); 3) "Can you tell me any more about that?" (Cimino, Verfaellie, Bowers & Heilman, 1991). The prompts were used in the above order. If the participant failed to respond within 60 seconds, the instruction, "Think about a day in your life that the word '...' reminds you about," was repeated. An 'omission' response was recorded if the person did not respond with an autobiographical memory. The next cue word was presented when it was obvious that the person had no further response to give or, all three prompts had been given, or the 180 second time limit had expired.

Sessions were audio-taped so that 'specific,' 'general,' and 'omission' responses could be categorized and response latencies for specific memories timed. For the purposes of analyses, responses that were not specific were assigned the maximum response time of 180 seconds (following Williams & Broadbent, 1986). The timing for specific memories was taken from the end of the experimenter's instruction until the participant began to report a specific memory.

All data was analyzed using SPSS for Windows, Version 9.0

RESULTS

Inter-rater Agreement for Response Category and Response Latency

Inter-rater agreement for the allocation of memories to the categories 'specific,' 'general' and 'omission,' was established by comparing the experimenter's results with those of the same independent rater, on a randomly selected 50% of the sample. Kappa for the agreement between the two was .69 ($p < .001$) indicating a high level of agreement. The percentage agreement between the independent rater and the experimenter was 87% which compares favorably with Williams and Broadbent, (1986) who reported between 87% and 93% agreement for response category allocation. The response latencies for a random sample representing approximately 10% of specific responses were timed by an independent rater. A statistically significant positive correlation was observed between the response times measured by the rater and the experimenter ($\rho = .84$, $df = 73$, $p < .001$).

Practice Effects

Presentation of the Standard and Pictorial Conditions was counterbalanced to minimize practice effects. However, when completing the second experimental condition, a participant's response for a particular cue word sometimes matched the response they had given to that cue word during the first experimental condition. The number of matched responses observed when the Standard condition was completed second, and when the Pictorial Condition was completed second, was totaled. The Independent t -Test indicated no significant differences in number of matched responses for each condition ($t_{(20)} = -1.122$, $p < .275$, two-tailed), suggesting that practice effects were similar across both

conditions. This finding supported the use of a repeated measures design for the main data analyses.

Response Specificity

There were no significant differences in the number of specific or general responses, or response omissions, given by male and female participants (Mann-Whitney U Test, all significance levels $p > .05$, results displayed in Table 1) and the data was collapsed for analysis.

INSERT TABLE 1 HERE

All participants responded with specific or general memories to at least some cues, and specific responses were the most common. Across both experimental conditions, participants gave significantly more total specific responses than general responses (Wilcoxin Signed Rank Test, Standard Condition: $z = 2.857$, $N \text{ ties} = 21$, $p < 0.040$, 2-tailed; Pictorial Condition: $z = 2.631$, $N \text{ ties} = 21$, $p < 0.009$, 2-tailed), and there were significantly more general responses than response omissions (Wilcoxin Signed Rank Test, Standard Condition: $z = 3.618$, $N \text{ ties} = 19$, $p < 0.001$, 2-tailed; Pictorial Condition: $z = 3.533$, $N \text{ ties} = 16$, $p < 0.001$, 2-tailed). Following Williams and Dritschel (1988), the mean number of first responses that were specific memories was calculated for each participant. In addition, the mean number of first responses that were general memories and, the mean response omissions was calculated. Finally, the mean specific and general

responses that were produced only after prompting by the experimenter was calculated. (Means displayed in Table 2).

INSERT TABLE 2 HERE

The closest comparative data for this investigation is response specificity data for the proportion of first responses that were specific memories, produced by people with average intelligence. For emotion cues, the proportion of first responses that were specific memories has tended to vary across investigations. For example, 67% (Williams & Dritschel, 1988), 78% and 82% (Williams et al, 1996) and 84% (Wilhelm et al, 1997). For non-emotion cues, data relating to the proportion of first responses that were specific memories could be found in only one investigation reviewed, Williams et al (1996), for which the proportion was 88%. For the current investigation the proportion of first responses, for emotion cues, that were specific memories was 33% for the Standard Condition and 43% for the Pictorial Condition, and for non-emotion cues was 37% for the Standard Condition and 33% for the Pictorial Condition. Participants in the current investigation produced more first responses that were specific memories than any other category, however, the proportion was less than that reported for people of average intelligence in the closest comparative investigations.

The data for response specificity satisfied the assumptions of sphericity required for analysis of variance (ANOVA). Two by two ANOVA designs, for repeated measures, were used to test response differences between experimental conditions and cue words. Data for first responses that were specific memories was analyzed to assess if the

Pictorial Condition of the autobiographical memory assessment facilitated more specific autobiographical memory retrieval than the Standard Condition, or if fewer specific responses would be produced for emotion cues compared to non-emotion cues. Factor one was the within groups factor of experimental condition, with two levels, Standard and Pictorial. Factor two was the within groups factor of cue type, with two levels, emotion and non-emotion. There were no main effects observed for any variable (condition, $F_{(1,21)} = .474, p < .499$; cue, $F_{(1,21)} = .772, p < .368$), nor interactive effects (condition x cue $F_{(1,21)} = 2.297, p < .144$). The same ANOVA design was used to analyze the data for specific responses that were produced only after prompting by the experimenter. It was considered that fewer prompted responses for specific memories would be observed in the Pictorial Condition than the Standard Condition, and that more prompted responses would be observed for specific memories to emotion cues than non-emotion cue. This was not supported by the results. No main effects were observed for any variable (condition, $F_{(1,21)} = .374, p < .548$; cue, $F_{(1,21)} = 1.530, p < .230$), nor interactive effects (condition x cue, $F_{(1, 21)} = 1.261, p < .274$).

First responses that were general memories were compared using the 2 x 2 ANOVA design described above. Consistent with the first hypotheses that participants would produce more specific memories for pictorial cues and less specific memories for emotion cues, it was predicted that participants would produce fewer general memories for the Pictorial Condition of the assessment compared to the Standard Condition and that more general memories would be produced in response to emotion cues compared to non-emotion cues. No main or interactive effects for any variable were observed (condition, $F_{(1,21)} = 2.252, p < .148$; cue, $F_{(1,21)} = .025, p < .877$; condition x cue, $F_{(1,21)} = .991, p < .673$) and the hypotheses were not supported. The data for prompted general

responses was also submitted to the 2 x 2 ANOVA design. It was predicted that fewer prompted responses would be observed for the Pictorial Condition compared to the Standard Condition and that more prompted responses would be observed for responses to emotion cues compared to non-emotion cues. The results indicated that there were no significant main or interactive effects (condition, $F_{(1,21)} = .276, p < .605$; cue, $F_{(1,21)} = 1.151, p < .296$; condition x cue, $F_{(1,21)} = .884, p < .358$), confirming that the hypotheses were not supported.

Finally, the same 2 x 2 ANOVA design was used to analyze the data for response omissions to test the prediction that fewer omissions would be observed for the Pictorial Condition than for the Standard Condition, and that more response omissions would be observed for emotion words than for non-emotion words. Again, there were no significant main or interactive effects (condition, $F_{(1,21)} = 1.000, p < .329$; cue, $F_{(1,21)} = .167, p < .687$; condition x cue, $F_{(1,21)} = .241, p < .628$).

Statistically significant differences were not observed between any of the independent variables that were compared using 2 x 2 ANOVA for repeated measures. However, participants produced significantly more specific memories overall, than general memories or response omissions. This suggests that individuals with mild mental retardation can produce specific autobiographical memories, and are able to do so when assessed using a version of the autobiographical memory assessment that has been widely used with people of average intelligence.

Response Latency

There were no significant differences between the mean response times for specific memories for male and female participants (Standard Condition: emotion cue words, $t_{(20)} = .343$, $p < .736$, 2-tailed; non-emotion cue words, $t_{(20)} = .252$, $p < .804$, 2-tailed; Pictorial Condition: emotion cue words, $t_{(20)} = .213$, $p < .834$, 2-tailed; non-emotion words, $t_{(20)} = 1.723$, $p < .100$, 2-tailed). The data was collapsed for subsequent analysis. The maximum, minimum and mean response latencies for specific autobiographical memories for the Standard and Pictorial experimental conditions and for emotion and non-emotion cue types are listed in Table 3.

INSERT TABLE 3 HERE

Mean specific response latencies for the pictorial condition were faster than for the standard condition and mean response latencies for emotion cue words were slower than for non-emotion cues. However, the range in response times varied greatly, as demonstrated by the standard deviation scores and observation of the maximum and minimum response times. Some participants produced memories even before the instructions for cue words were complete, as demonstrated by the minimum response time of .00 seconds. Conversely, some participants required almost the full response time-limit of 180 seconds to produce a specific memory. If this time limit had not been extended from the 60 second standard response limit, used in assessment with people with average intelligence, fewer specific responses are likely to have been observed for participants in this investigation, as many would have had insufficient time to produce a specific response.

The data for response latency satisfied the assumptions of sphericity required for analysis of variance (ANOVA), permitting the use of a 2 x 2 ANOVA design for repeated measures to test the differences in mean response times. Factor one was the within groups factor of experimental condition, with two levels, Standard and Pictorial. Factor two was the within groups factor of cue type, with two levels, emotion and non-emotion. No main or interactive effects were observed for any variable (condition, $F_{(1,21)} = 1.981$, $p < .174$; cue, $F_{(1,21)} = .121$, $p < .732$; condition x cue, $F_{(1,21)} = .053$, $p < .820$). The non-significance of the results for response latency are consistent with the findings for response specificity, indicating that there were no significant differences in autobiographical memory retrieval for any of the experimental conditions.

The Relationship Between Response Specificity and Participant IQ

The current investigation focused on participants with mild mental retardation. However, the range of participant ability, as defined by level of IQ, was broad and it was the experimenter's observation that some participants who were assessed at the lower end of the 54-77 IQ range had some difficulties grasping the procedure, and responded primarily with general autobiographical memories or response omissions. Although not part of the originally planned statistical analysis it was considered of interest to investigate this observation further, by statistically examining the relationship between response specificity and participant Full Scale IQ. Contrary to expectation, a negative relationship was observed between participant total response specificity (emotion and non-emotion cues combined) and Full Scale IQ level, but this was not statistically significant ($r = -0.15$, $df = 18$, $p < .951$).

Statistical Power

The standard deviations for the response specificity and response latency means were observed to be large, relative to the mean (refer to Tables 2 and 3), indicating that many data points were distant from the mean. This degree of variability in the data was confirmed by submitting the means and standard deviations for response specificity and response latency to a power calculation algorithm (refer to page 50 for details). The observed results ranged from 0.099 to 0.283, at a significance level of $p < .050$, indicating that the data collated for this investigation had low statistical power. Factors that possibly contributed to this variance in the data are discussed below.

DISCUSSION

Summary of Main Findings

This investigation examined the specificity of autobiographical memory in people with mild mental retardation. It was observed that specific responses were the most common across all conditions of the experiment. The hypothesis that the Pictorial Condition of the autobiographical memory assessment would facilitate more specific autobiographical responses than the Standard Condition, was not supported, neither was the hypothesis that response specificity for emotion cues would be inferior to response specificity for non-emotion cues. Statistically significant differences between conditions and cue types were not observed for mean response latencies for specific memories.

Possible Sources of Variance Contributing to the Non-significant Findings

The quality of the pictorial stimuli was one factor possibly contributing to the non-significant findings. The non-emotion pictorial stimuli were selected by the experimenter and the degree to which each picture represented the cue word was not standardized, unlike the pictures of facial expression (Ekman & Friesen, 1975). It is possible that the non-emotion pictures were less representative of the words they depicted than anticipated, such that they failed to facilitate autobiographical retrieval as hypothesized. For example, the picture for the cue word 'Shop' featured a well-known chain store and this may have served to constrain the autobiographical memory search to incidences in that store, rather than acting as a global cue for experiences to do with 'Shop.'

Although Ekman and Friesen's emotion pictures have been widely used in research with people with mental retardation (Rojahn et al, 1995) it may be that in this investigation the photographic emotion cues, as with the non-emotion cues, were not sufficiently representative of the individual emotions. Earlier research has reported that people with mental retardation may demonstrate some confusion when distinguishing between the photographs of, for example, surprise and happy, anger and fear (Gray, Fraser & Leudar, 1983). It is therefore possible that the Pictorial Condition of the experiment as it exists was insufficiently sensitive to enhance autobiographical retrieval. Further research might use a range of pictorial stimuli, for example, several photographs representing the cue word, and/or line drawings of the cue word. Video footage is another possibility, which would provide auditory cues as an additional source of information. Improving the quality and range of the stimuli in this manner may more greatly assist the individual in their search for an autobiographical memory and help reduce the possible confusion experienced by participants when interpreting the emotion and non-emotion picture cues.

Alternatively, it may be that the verbal and written cue alone, as presented in the Standard Condition of assessment, was a sufficient cue for the participants in this research. Being a generic stimulus, the domain of the memory search may not have been constrained in the same way as with the pictorial cues. The results in this investigation may reflect a 'ceiling' effect, that is, enhancement of the cue word stimuli makes no difference to the level of autobiographical retrieval, as the limits of ability are sufficiently cued by a standard procedure. Future research may help clarify these issues relating to the utility of pictorial stimuli in autobiographical memory assessment with people with mild mental retardation.

A further consideration is the evidence that many people with mental retardation demonstrate visual perceptual deficits (Fox & Oross, 1990). Although pictorial stimuli have been found to enhance information processing in people with mental retardation (Lancioni et al, 1999; Wilkinson et al, 1994; Sigelman & Budd, 1986), it is possible that some participants had visual perceptual deficits that interfered with information processing in the Pictorial Condition. To minimize the potential effects of visual perceptual problems on the dependent variables, it may have been advisable to assess participants' visual perceptual skills and to exclude those who demonstrated specific deficits.

It was observed that the range of participant ability, as defined by IQ level, was broad. However, contrary to clinical observation that some participants who were assessed at the lower end of the 54-77 IQ range responded with less specific responses, a statistically significant relationship between Full Scale IQ and autobiographical memory specificity was not supported. Further research might address the relationship between

autobiographical memory response specificity and IQ. A relationship between general memory deficits and severity of intellectual disability has already been identified (McDaniel et al, 1998; Turner et al, 1996; Winters & Semchuck, 1986). Similarly, research with older adults, has suggested that the ability to retrieve specific autobiographical memories declines as working memory and general cognitive functioning decline (Winthorpe & Rabbitt, 1988; Phillips & Williams, 1996). Whether or not a similar relationship exists between intellectual ability and autobiographical memory specificity remains to be established.

It is possible that the small sample size in the current investigation also contributed to the non-significant results, in that there was insufficient data to minimize the variance, in what is a highly heterogeneous population of mixed etiology and subsequent strengths and deficits. Differential effects of the independent variables, if any, were likely to have been masked by this high level of etiological variability. The obvious recommendation is that a much larger sample size contributes to future investigations. Aside from the variability in the data the findings do indicate that, allowing for an increased response time limit of 180 seconds, people with mild mental retardation can produce specific autobiographical memories, using the standard method of assessment already widely used with people who are of average intelligence. In addition, the data produced by participants can be reliably categorized and timed, as demonstrated by the level of inter-rater agreement. These findings permit consideration of the possible clinical applications of autobiographical memory research and areas worth investigating further.

Clinical Application of Autobiographical Memory Research with People with Mild Mental Retardation and Suggestions for Further Investigation

It has been reported that depression may be mediated by similar cognitive processes in people with average intelligence and people with mild mental retardation (Nezu et al, 1995). The finding from the current investigation that participants with mild mental retardation could recall specific autobiographical memories, raises questions regarding the response specificity of people with mental retardation who are depressed compared with those who are non-depressed. Investigating whether the differences in response specificity observed in depressed and non-depressed people of average intelligence would be evident in people with mental retardation, may contribute to better understanding of the process of depression in this client group. Evans et al (1992) have reported that difficulty searching for specific autobiographical memories in depression, is an important barrier to the production of effective problem-solving strategies. People with mental retardation demonstrate general problem solving deficits (Evans, 1998; Luckasson et al, 1992; Ferretti & Cavalier, 1991; Hesel & Matson, 1988) and the possibility of a link between this and autobiographical memory specificity is another area for future investigation. Furthermore, the comparative problem-solving abilities of depressed and non-depressed groups, as a function of autobiographical memory specificity, may also merit investigation.

Autobiographical memory research may help inform cognitive behavioral intervention to ameliorate faulty cognition associated with depression in people with mild mental retardation. Cognitive behavioral approaches require the individual to identify an emotion and link this with a past life event; thus there is an emphasis on autobiographical remembering. This procedure of autobiographical retrieval in CBT is similar to the

procedure for autobiographical memory assessment. The results from the current investigation that people with mild mental retardation are capable of recalling specific memories are preliminary, but nonetheless support the validity of CBT work with this client group.

Research with people of average intelligence has suggested that cognitive behavioral techniques may help improve encoding of autobiographical information and aid more specific recall of life events (Brittlebank et al, 1993). For example, reviewing event-emotion links provides the individual with more alternatives for interpreting life events. It has been suggested that life review in this manner helps alleviate depressive symptoms by increasing the autobiographical information available to balance negative cognition with more positive (Brittlebank et al, 1993). The emotion recognition deficits often experienced by people with mental retardation (Rojahn & Rabold, 1995; McAlpine et al, 1991) may hinder the process of making event-emotion links in CBT. However, it has been demonstrated that people with mild mental retardation can be taught to recognize and express basic emotions (Stewart & Singh, 1995). In addition, memory skills in people with mental retardation are reported to benefit from training (Baldi, 1998; Bray, Sarino, Borges & Hawk, 1994). The findings that emotion recognition and memory abilities can be improved through appropriate training, supports the potential of CBT techniques with individuals who have mild mental retardation. It is possible that learning to identify emotions and link these with life events, through the CBT process, may help improve autobiographical memory specificity with this client group, by providing more information to add to the autobiographical memory database. Furthermore, a possible indicator of therapeutic progress may be improvements in response specificity to autobiographical memory assessment as observed after cognitive intervention.

In summary, autobiographical memory assessment with people with mild mental retardation is a potentially promising new area of research, that may yield useful information concerning the cognitive processes of people with mild mental retardation who are depressed. This has already been highlighted as an important area of ongoing investigation (Clements, 1997). However, before the possible links between autobiographical memory functioning, problem-solving and depression can be investigated in people with mild mental retardation, further basic research is required regarding how autobiographical memory is adequately assessed. At the very least replication of the results that individuals can produce specific autobiographical memories is indicated.

Table 1.

Results of Mann Whitney U Tests comparing response specificity to the Standard and Pictorial Conditions of the autobiographical memory assessment

Response category	Standard condition				Pictorial condition			
	Emotion cues		Non-emotion cues		Emotion cues		Non-emotion cues	
	z	sig*	z	sig*	z	sig*	z	sig*
First specific	.270	.787	.646	.518	.936	.349	1.545	.122
First general	0.68	.946	.511	.609	.978	.328	1.274	.203
Prompted specific	.997	.319	1.837	.066	.577	.564	.323	.747
Prompted general	.098	.922	.495	.620	.000	1.000	.261	.478
Omission	.098	.922	.584	.559	.661	.509	1.817	.069

* 2-tailed significance level

Table 2

Mean number of first and prompted responses categorised as specific or general and mean responses categorised as response omissions for the Standard and Pictorial Conditions (standard deviations in parentheses)

Response category	Standard condition		Pictorial condition	
	Emotion cue	Non-emotion cue	Emotion cue	Non-emotion cue
First specific	2.0 (1.7)	2.2 (1.6)	2.6 (1.9)	2.0 (1.9)
First general	1.5 (1.2)	1.4 (1.1)	1.1 (1.5)	1.2 (1.3)
Prompted specific	1.7 (1.2)	1.2 (0.8)	1.4 (1.2)	1.3 (0.8)
Prompted general	0.3 (0.7)	0.3 (0.9)	0.4 (1.0)	0.2 (0.5)
Omission	0.32 (0.9)	0.36 (0.9)	0.18 (0.5)	0.32 (1.1)

Table 3

Minimum, Maximum, and Mean response latencies for specific autobiographical memories for the Standard and Pictorial conditions (standard deviations in parentheses).

	Standard Condition		Pictorial Condition	
	Emotion cue	Non-emotion cue	Emotion cue	Non-emotion cue
Mean	29.51 (31.12)	24.63 (28.29)	21.40 (21.82)	19.95 (32.82)
Minimum	.00	.00	.00	.00
Maximum	162.89	130.28	97.53	143.91

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Single N Case Study

**OBSERVATIONS OF IMAGE INTENSITY AND IMAGE-RELATED
ANXIETY DURING TREATMENT OF POSTTRAUMATIC STRESS
DISORDER USING IMAGE HABITUATION TRAINING: A SINGLE
CASE REPORT**

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Target Journal: *Behaviour Research and Therapy*

Abstract

Habituation of Posttraumatic Stress Disorder (PTSD)-related anxiety is achieved only when there is 'functional CS (conditioned stimulus) exposure,' that is, the individual actively engages with the stimulus and experiences the associated fear. Subjective ratings of anxiety have been used as a measure of emotional engagement with the CS. In this investigation image intensity was considered as another possible indicator of emotional engagement with the CS, in view of the positive relationship between image intensity and physiological measures of anxiety.

Image habituation training (IHT) is an exposure technique reported to facilitate functional CS exposure in patients with chronic PTSD. If IHT is successful in engaging the patient with the trauma-related stimuli, it would be expected that a positive relationship between image-related anxiety and image intensity would be observed. The investigation focused on IHT as an aspect of intervention for chronic PTSD experienced by a female patient. Ratings of image-related anxiety and intensity were monitored. Both within- and between-IHT session reductions were observed for both ratings. The findings are limited by the small number of IHT sessions completed by the patient and absence of follow-up data to confirm maintenance of treatment gains. Replication of these results on a larger scale would increase the support for the role of image intensity as a clinically useful measure during exposure treatment for PTSD.

Keywords: PTSD; Exposure; Image-intensity; Single case design

Small Scale Project

**COMPLETION OF OUT-PATIENT METHADONE DETOXIFICATION
BY HEROIN DEPENDENT CLIENTS REFERRED TO A SUBSTANCE
MISUSE SERVICE**

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(See Appendix 4.1)

Abstract

Objectives: To identify variables associated with completion of methadone detoxification for an outpatient substance misuse service. To consider how service delivery might be improved and identify areas of further investigation.

Design: Retrospective record review of client and treatment variables stored on an existing electronic database and in case records. Semi-structured interview with staff involved in methadone detoxification treatment.

Setting and Participants: Data from 92 heroin dependent clients, treated for out-patient methadone detoxification by a substance misuse service in the south of Scotland, between April 1996 and March 1997. Staff involved in treatment were interviewed: three 'E' grade Staff Nurses; two 'G' grade Charge Nurses; one Consultant Clinical Psychologist; and one Consultant Psychiatrist.

Main outcome measures: Completion of methadone detoxification as recorded on database. Collation of information from staff interviews.

Results: 33.7% of clients completed methadone detoxification. Total treatment sessions, a higher number of client cancellations and failures to attend appointments were the only variables demonstrating a significant relationship with completion of detoxification. However, those completing methadone detoxification remain in treatment for longer and accumulate a higher number of treatment sessions than those

who do not complete. Furthermore, the greater the number of sessions a client is offered, the more opportunities a client has to cancel or not attend an appointment. Staff criteria for determining successful completion of methadone detoxification were found not to be consistent. Finally, inconsistent record-keeping in both client case notes and the electronic database was highlighted.

Conclusions: Adequate evaluation of any treatment process requires that treatment goals and their attainment are commonly understood by those involved in the intervention. Recommendations were made regarding the type of client and treatment information that could most usefully be recorded to assist future service evaluation.

Introduction

Relapse is a central problem in the treatment of addictive behaviours and many opiate-dependent individuals who receive out-patient methadone detoxification programmes fail to complete treatment (Unnithan, Gossop and Strang, 1992). Those who do complete methadone detoxification are reported to be three times as likely to be drug free a year later than those who do not complete (Craig, Rogalski and Veltri, 1982). The degree to which client outcomes can contribute to measuring the quality of methadone treatment services has attracted increasing interest (Phillips et al, 1995). Investigating client outcomes is important to help services deal more effectively with high drop-out rates and improve the quality of services provided.

Factors influencing completion of methadone detoxification

Studies of out-patient samples have indicated that race, gender and level of drug dependency pre-treatment are significant and independent predictors of methadone detoxification outcome (Iguchie and Stitzer, 1991). However, level of drug dependency prior to treatment was not reported to be significantly predictive of outcome by San et al (1989). Level of psychological disturbance, specifically depressive symptomatology, was reported to predict level of opiate abuse post-treatment and level of occupational functioning (Rounsaville, Kosten and Kleber, 1985). However, results reported by San et al (1989) suggested that higher levels of psychological symptomatology were associated with treatment *success*. Methadone treatment schedule, that is, initial methadone dose

and subsequent reductions in dosage during detoxification, has been reported to differentiate between detoxification success or failure (Razani et al, 1975; San et al, 1989). However, these findings relate to in-patient treatment which raises questions about their applicability to out-patient populations. Socio-demographic characteristics and client variables on the whole, have not been consistently linked with successful completion of methadone detoxification (San et al, 1989) and are reported to have a weak relationship with treatment outcome (Craig et al, 1982).

Other research has focused on methadone maintenance intervention rather than methadone detoxification. Arguably the two treatment conditions may appeal to different opiate dependent groups although Tennant (1985-86) found no significant differences between participants in either group for a variety of socio-demographic variables. There appears to be some overlap of the variables cited as predictors of compliance with maintenance and detoxification treatment conditions. For example, psychological problems pre-treatment, (McLellan, Luborski and Woody, 1983; Caplehorn, Reilly and Wodak, 1993) and gender differences, (Hein and Levin, 1994). Specifically, women with a methadone using significant other are deemed more at risk of treatment non-compliance (Caplehorn et al 1993). Methadone treatment schedule has been linked with compliance (Strain et al, 1993) in addition to level of education, age and history of opiate use (Curtis and Mike, 1978, Krakowski and Smart, 1974). Clients with a criminal record, absence of significant other support and without employment are also more likely to be discharged from treatment for non-compliance (Krakowski and Smart, 1974). Patients with a stable income were found to be more likely to comply with treatment (Del Rio, Mino and Perneger, 1997). In contrast, other studies report that the only patient variable related to

retention in methadone programmes was patient age (Bertschy, 1995; Condelli, 1993). Magura, Nwakeze and Demsky (1998) have highlighted that *treatment* variables are a more important focus for patient retention in methadone treatment.

Evidently, the factors thought to influence successful methadone treatment are wide ranging and not consistently reported. In addition, drawing directly from the findings of other investigations has limitations, in that the criteria for treatment success or failure may differ and factors identified as influencing outcome in one study may not generalise to other treatment environments.

Focus of this investigation

The variables associated with completion of out-patient methadone detoxification provided by a substance misuse service were investigated. The standard procedures for opiate users seeking help from the service were either to stabilise them on a dose of methadone equivalent to their opiate use, and then reduce this to a maintenance dose, or to stabilise them and withdraw from methadone completely. The data recorded by the service monitored the number of clients who attempted detoxification and how many successfully completed. The service did not record the number of clients who stabilised on a methadone dose, nor those who attempted to stabilise but were unsuccessful. On reaching their methadone treatment goal (that is, detoxification or stabilisation) clients were offered follow-up intervention with key-workers to address relapse prevention and lifestyle change.

The criteria used by staff members to assess successful methadone detoxification was investigated, as this appeared to be subject to the discretion of the clinician. Consistent criteria for treatment goals are an important consideration when attempting to evaluate outcome at each stage of the treatment process.

An evaluation of this nature had not previously been carried out by the service. It was hoped that the findings would provide information to promote further service evaluation and revision of practice. The investigation had three broad aims:

1. To identify variables associated with the completion of methadone detoxification using existing service data.
2. To identify the criteria staff were using to determine successful methadone detoxification.
3. To consider how service delivery might be improved and identify areas of further investigation.

METHOD

Participant Information

The data analysed was from heroin dependent clients who had attempted out-patient methadone detoxification and had been discharged from that episode of care. These service users attended a substance misuse centre in the south of Scotland between the months of April 1996 and March 1997. There were 303 referrals for treatment for opiate abuse during this time period, however, only 251 initial appointments were attended.

Referrals were excluded if heroin dependency was not the main reason for referral or the client's starting methadone dose was not available from their records. This exclusion criteria reduced the sample to 92. Of this group, 31 (33.7%) completed detoxification treatment ('detox completers') leaving 61 (66.3%) who did not complete ('detox non-completers'). The sample comprised 80 males (86.9%) and 12 females (13.1%) with an age range of 16 –37 years (mean age = 24.3 years). Ninety-eight-point-seven percent of clients had been referred for opiate dependency only with the remaining 1.3% referred for both opiate and alcohol dependency. Eighty-one-point-eight percent were self-referred, nine referrals came from General Practitioners and seven referrals from Social Work or other sources. Fifty-three-point-six per cent of referrals were banded in social class V; 44% were banded in social classes II -IV and 2.4% were classed as students. Sixty-seven-point-eight percent of the sample were unemployed. The majority of clients resided in the area local to the clinic (71.4%) with the remainder distributed amongst proximal districts.

Staff involved in detoxification treatment during the specified time period were interviewed. They comprised three 'E' grade Staff Nurses, two 'G' grade Charge Nurses, one Consultant Clinical Psychologist and one Consultant Psychiatrist.

Design

In fulfilment of aim one, the investigation took the form of a retrospective record review using client information stored on an existing electronic database. The starting methadone dose administered as part of treatment was obtained from patient records. The client and treatment variables included in the analyses were as follows: age; employment

status; marital status; previous contact with other services; previous contact with this service; route of opiate administration; gender; social class; zone of residence; referring agent; start methadone dose; total number of treatment sessions; number of appointments cancelled by client; number of appointments client failed to attend (DNA); and client key-worker. The data for these variables is summarised in Table I and Table II. Table I contains summary information for the categorical (or nominal) data and Table II summarises the information for the numerical data.

INSERT TABLES I & II HERE

Aim two was addressed by conducting a semi-structured interview (Appendix 4.2) with the identified staff members who were asked to define the criteria they used when filling in the 'detox completed' section of the client's data form.

RESULTS

Categorical variables and completion of methadone detoxification

Chi-square analyses were used to explore the relationship between completion or non-completion of methadone detoxification and several, categorical, client-related variables (listed in Table III). Where cells had an expected count of less than five a Fisher's exact test was used. 'Relationship status,' was collapsed from the four categories, 'single,' 'cohabiting,' 'married,' 'separated,' to two categories, 'with partner' and 'without

partner' because of very low frequency count in two of the categories. For the same reason, 'route of opiate consumption' was collapsed from three to two categories, that is, 'injection' and 'oral/smoked.' Results of Chi-square analyses are summarised in Table III.

INSERT TABLE III HERE

No significant relationships between the independent variables and the dependent variable, completion of methadone detoxification, were identified. The lowest significance value was $p = 0.091$.

Numerical variables and completion of methadone detoxification

A common non-parametric statistic for unrelated samples is the Mann-Whitney U Test which was used to analyse the numerical data. This was selected on the basis of the descriptive summary of the data in Table 2 indicating departure from a normal distribution. The Mann-Whitney U Test indicated a highly significant positive relationship between total treatment sessions and completion of detoxification ($U = 478$, $p = 0.001$, two-tailed). A significant relationship with completion of detoxification was also demonstrated for number of client cancellations ($U = 738$, $p = 0.050$, two-tailed) and DNA's ($U = 606.5$, $p = 0.005$, two-tailed). There were no significant differences for Age or Methadone dose on completion of detoxification (Age: $U = 848.5$, $p = .421$, two-tailed; Methadone dose: $U = 904.5$, $p = .731$, two-tailed).

However, the results reflect what might have been expected, given that those completing methadone detoxification remain in treatment for longer and accumulate a higher number of treatment sessions than those who do not complete. Furthermore, it is likely that cancellations and DNA's are related to total treatment sessions: the greater the number of sessions a client is offered, the more opportunities a client has to cancel or not attend an appointment.

Staff criteria for determining completion of methadone detoxification

Staff definitions of 'detox' completion were collated and categorised. As anticipated, criteria for determining successful completion of methadone detoxification was not consistent across staff members. Opinion was divided into three categories as illustrated in Table IV.

INSERT TABLE IV HERE

Staff criteria ranged between rigid expectation of complete cessation of opiate use and more flexible criteria based on a 'harm reduction' ethos. Staff reported that their criteria were flexible depending on the individual being treated, the extent and nature of their heroin use and related social problems.

Discussion

Research has reported a number of client and treatment variables that may be associated with successful methadone detoxification. However, findings are conflicting and some authors have suggested that client variables have little impact on methadone treatment outcome (Craig et al, 1982; Magura et al, 1998.) This investigation looked at the client and treatment variables recorded by a substance misuse service and their relationship with methadone detoxification outcome (Aims 1 and 2), in the hope of highlighting ways of improving service delivery and to identify areas of further investigation (Aim 3).

Completion of detoxification was found to have a significant relationship with total treatment sessions, number of client cancellations and DNA's. This may be explained by the fact that those completing detoxification remain in treatment for longer and subsequently accumulate more treatment sessions. The practice of discharging clients in the first one or two weeks of methadone treatment if they did not achieve stability, would also have contributed to this result. Other statistically significant relationships between completion of methadone detoxification and the independent variables were not identified.

Inconsistent record-keeping in both client case notes and the electronic database was highlighted. Records on methadone treatment schedule were not available for 9.8% of the referrals considered in the sample. Where a record had been kept, the entries for methadone dose were often not dated, making treatment schedule impossible to establish. Other information stored on database, for example, 'additional treatments received' (in

conjunction with methadone) was unusable, again, due to incomplete and inconsistent record-keeping. Client psychological status on referral has been identified in the literature as a potentially important indicator for methadone detoxification outcome (Rounsaville, et al, 1985) but was not available for the study as formal measures of psychological status were not routinely collated by the service.

Adequate evaluation of any treatment process requires that treatment goals and their attainment are commonly understood by those involved in the intervention. Across staff members there was variability in the criteria for establishing client completion of methadone detoxification. This has implications for the quality of the data kept by the service, in that, depending on the criteria used, those categorised as 'detox completers' by some staff members would have been categorised as 'detox non-completers' by other staff members. Overall, inconsistent record-keeping greatly reduced the number of referrals included in the sample and the quality of the data was affected by varying definitions of treatment outcome used by staff. In their current form, the variables 'detox completion' and 'detox non-completion' were neither useful nor particularly valid for evaluating this phase of treatment. In light of these findings the following was recommended:

1. A re-examination of how client and treatment information is recorded, specifically, information on 'additional treatments received,' 'methadone schedule' and 'methadone dose.'
2. An agreement amongst staff members of the criteria to be used when determining completion of methadone detoxification.

Craig et al (1982) have commented that although overall abstinence from opiates tends to be low, simply completing methadone detoxification is associated with improved longer term treatment outcome. Therefore completing this phase of intervention is an important treatment goal. Drug treatment outcome is undoubtedly influenced by many factors (Brewer et al, 1998) but it may be that completion of detoxification is a significant psychological hurdle that promotes further change in lifestyle habits. If staff adopted the more flexible criteria for detoxification completion, this may promote greater numbers of 'detox completers,' retain clients in treatment for longer and thus potentially improve longer term treatment success.

Assessment of client psychological status pre- and post- intervention would enrich the information available to the service for evaluating treatment outcome in future. Other relevant information to include for further research would be a record of drug using significant others as this has also been linked with completion of methadone treatments (Capelhorn et al 1993).

It was anticipated that acting on these recommendations would help generate more complete and consistent information for future service evaluation. A more informed service evaluation would more accurately reflect the service being provided by the substance misuse team and contribute to guidelines for service development.

Table II Summary of numerical data extracted from database for analyses

Variables	Detox Completed				Detox Not Completed			
	Mean	SD	Max Min	Range	Mean	SD	Max Min	Range
Age (n=92)	23.113	4.098	35 19	16	24.967	5.799	37 16	21
Treatment related								
Methadone dose (n=92)	30.71	7.56	50 20	30	31.87	8.87	60 40	40
Cancellations (n=91)	.839	.259	6 0	6	.283	8.265 E-02	3 0	3
DNA (n=91)	3.516	.497	12 0	12	2.033	.288	14 0	14
Total Treatment Sessions (n=91)	13.065	8.548	39 1	38	7.6	7.432	31 1	30

Table III Results of Chi Square analysis

Variables	Chi Square value	<i>df</i>	Level of significance
Previous contact with unit	2.864	1	.091
Route of opiate consumption	2.710	1	.100
Employment Status	2.544	1	.111
Relationship Status	1.014	1	.314
Sex*	.392	1	.530
Previous contact elsewhere*	.174	1	.729

*Fisher's exact test (two-tailed): used when cells had expected count of less than 5

Table IV Summary of staff criteria for completion of opiate detoxification

Category	Staff response
Category 1 (n = 2)	Detoxification considered complete if client had stopped methadone as planned and was no longer using opiates (as determined by urine analysis.)
Category 2 (n = 2)	Detoxification considered complete if client had stopped methadone as planned and had attempted to reduce opiate use (abstinence not essential.)
Category 3 (n = 3)	Detoxification considered complete if client had stopped methadone as planned; status of ongoing opiate usage considered irrelevant to the decision.

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Notes for Contributors

Contributors should bear in mind that they are addressing an international audience. Manuscripts that do not conform to the requirements listed below will not be considered for publication or returned to their authors. Submissions will be seen anonymously by two referees.

Manuscripts, ideally between 3000 and 7000 words, should be sent to Professor Len Barton, *Disability & Society*, Department of Educational Studies, University of Sheffield, 388 Glossop Road, Sheffield S10 2JA, UK. Articles can be considered only if **three complete copies of each manuscript** are submitted. They should be typed on one side of the paper, double spaced, with ample margins, and bear the title of the contribution. The name(s) of the author(s), the address where the work was carried out and full postal address of the author who will check proofs and receive correspondence and offprints should also be included on a separate sheet. Each article should be accompanied by an abstract of 100–150 words also on a separate sheet, and a short note of biographical details. All pages should be numbered.

Footnotes to the text should be avoided wherever this is reasonably possible.

Tables and captions to illustrations. Tables must be typed out on separate sheets and not included as part of the text. The captions to illustrations should be gathered together and also typed out on a separate sheet. Tables should be numbered by Roman numerals, and figures by Arabic numerals. The approximate position of tables and figures should be indicated in the manuscript. Captions should include keys to symbols.

Figures. Please supply one set of artwork in a finished form, suitable for reproduction. If this is not possible, figures will be redrawn by the publishers.

References should be indicated in the typescript by giving the author's name, with the year of publication in parentheses. If several papers by the same author and from the same year are cited, a, b, c, etc. should be put after the year of publication. The references should be listed in full at the end of the paper in the following standard form:

- For books:* SCOTT, P. (1984) *The Crisis of the University* (London, Croom Helm).
- For articles:* CREMIN, L. A. (1983) The problematics of education in the 1980s: some reflections on the Oxford Workshop, *Oxford Review of Education*, 9, pp. 33–40.
- For chapters within books:* WILLIS, P. (1983) Cultural production and theories of reproduction, in: L. BARTON & S. WALKER (Eds) *Race, Class and Education* (London, Croom Helm).

Titles of journals should *not* be abbreviated.

Proofs will be sent to authors if there is sufficient time to do so. They should be corrected and returned to the Editor within three days. Major alterations to the text cannot be accepted.

Offprints. Fifty offprints of each paper are supplied free. Additional copies may be purchased and should be ordered when the proofs are returned. Offprints, together with a complete copy of the relevant journal issue, are sent by accelerated surface post about three weeks after publication.

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Emotion and non-emotion cue words used across autobiographical memory investigations reviewed and additional words from sources cited in these investigations.

Negative emotion words				Positive emotion words				Non-emotion words			
Angry	Sorry	Sadness	Happy	Honest	Relaxed	Conversation	Make	Show	Bread		
Cruel	Mistake	Stress	Excited	Kindness	Special	Garden	Hide	Break	<i>Famous</i>		
Sad	Argument	Uneasy	Successful	Intimate	Gift	Late	Sing	Help	<i>Magazine</i>		
Sickness	Boredom	Restless	Relaxed	Loyalty	Amazed	Package	Practice	Occasion	<i>Chicken</i>		
Fatigue	Lazy	Urgent	Important	Affection	Sunny	Advice	Shop	Uncle	<i>Bag</i>		
Shame	Nervous	<i>Cry</i>	Smile	Bravery	Tender	Book	Library	Fashion	<i>Coffee</i>		
Panic	Tense	<i>Bad</i>	Open-minded	Brave	<i>Smile</i>	Flower	Box	<i>Weather</i>	<i>Boy</i>		
Ignorance	Lonely	<i>Panic</i>	Compliment	Comradeship	<i>Cheerful</i>	Game	Milk	<i>Juice</i>	<i>Restaurant</i>		
Anxiety	Disappointe	<i>Scared</i>	Laughing	Devotion	<i>Fun</i>	Dollar	Bell	<i>Sandwich</i>	<i>Country</i>		
Misery	d Tears	<i>Hate</i>	Happiness	Gaiety	<i>Good</i>	River	Look	<i>Home</i>	<i>Baby</i>		
Despair	Embarrassed	<i>Mad</i>	Interested	Surprised	<i>Nice</i>	Machine	Walking	<i>Hospital</i>	<i>Fire</i>		
Grief	Rude	<i>Death</i>	Friendly	Safe	<i>Success</i>	Dog	Open	<i>Photograph</i>	<i>Alcohol</i>		
Distrustful	Selfish	<i>Argue</i>	Proud	Strong	<i>Laugh</i>	Picture	Throw	<i>Sea</i>	<i>Boy</i>		
Hostile	Ashamed	<i>Fight</i>	Helpful	Intelligent	<i>Like</i>	Car	Cut	<i>Winter</i>	<i>Doctor</i>		
Cowardly	Jealous	<i>Trouble</i>	Enthusiastic	Self-disciplined	<i>Enjoy</i>	Hand	Work	<i>Shoes</i>	<i>Blood</i>		
Hurt	Guilty	<i>Worry</i>	Pleased	Love	<i>Clever</i>	Travelling	Run	<i>Jacket</i>			
Clumsy	Doubt	<i>Confused</i>	Kind	Joy	<i>Helpful</i>	Listening	Try	<i>College</i>			
Danger	Strange	<i>Ugly</i>	Loyal	Excited	<i>Witty</i>	Letter	Find	<i>Club</i>			
Blame	Pain	<i>Unkind</i>	Humorous	Peaceful	<i>Kind-hearted</i>	Window	Visit	<i>Eat</i>			
Fear	Failure	<i>Greedy</i>	Humour	Lucky	<i>Hope</i>	Tree	Fill	<i>Animal</i>			

Normal type = words used in previous studies; Italics = additional words selected from word sources cited in autobiographical memory investigations

INFORMATION FOR AUTHORS

Manuscripts should be prepared in accordance with the *Publication Manual of the American Psychological Association* (4th ed.). The instructions given there for preparing tables, figures, references, metrics, and abstracts should be followed. Regular articles are to include an abstract containing a maximum of 120 words. The editor is responsible for obtaining reviews and deciding on the disposition of all manuscripts (acceptance, rejection, or requests for revision). Once a manuscript is accepted for publication, the remainder of the production process is coordinated by the Assistant Editor, Yvette Taylor, 10886 Ravel Ct., Boca Raton, FL 33498; E-mail, ytaamr@aol.com; phone, 561-482-0341. For this purpose, an electronic version of the accepted manuscript should be provided. It is preferable for this to be IBM-compatible, in WordPerfect or Word on a 3.5 inch diskette.

Ethical Standards. All investigations using human participants must have been approved by the human subjects review committee of the author's institution. Submission of a manuscript to *AJMR* while that paper is under review by another journal is unacceptable. Presentation of a manuscript in electronic form on the Internet is considered to constitute publication and may be grounds for rejection of the paper by this journal.

Form. All sections of the manuscript (including quotations, references, tables, and footnotes) should be double spaced on 8" by 11-inch paper with at least a 1-inch margin on all sides. Authors should retain the original and submit four copies of the manuscript and figures to the editor, Donald K. Routh, Dept. of Psychology, University of Miami, PO Box 249229, Coral Gables, FL 33124-0721. Copies will not usually be returned. If the manuscript is prepared for blind review, a cover sheet should be submitted including title, authors, affiliations, and the address of the author to whom correspondence should be directed, as well as a running head (not to exceed 40 characters). Manuscripts will be reviewed anonymously if this is requested. For anonymous review, the running head rather than the author's name should appear on each page of the manuscript, and other identifying material should be removed. Titles should not exceed 15 words. Only standard abbreviations should be used. The preferred length of manuscripts is 20 typed pages or less, but somewhat greater length may be accepted depending on the complexity and importance of the research reported.

Abbreviations and Terminology. Abbreviations should be held to a minimum. The names of groups or experimental conditions should usually not be abbreviated. The full names of tests should be given when they are first mentioned, with the common shortened form in parentheses.

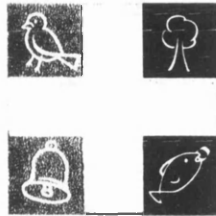
When context makes it clear whether an author is referring to people with mental retardation or when it is otherwise unnecessary to refer to intellectual level or diagnostic category, authors should use the most descriptive generic terms, such as children, students, or persons, without using qualifiers such as "with mental retardation," "with handicaps," or "with developmental disabilities." Under no circumstances should *retarded* be used as a noun. Prepositional constructions such as "students with mental retardation" or "individuals who have mental retardation" are preferred over adjectival constructions such as "mentally retarded people," except when clear communication dictates occasional use of adjectival designations. Because *normal* has multiple meanings and may inappropriately imply abnormal where it is not applied, this word should not be used. Instead, more operationally descriptive terms such as "intellectually average pupils" should be used.

Numerical and Illustrative Presentations and References. The metric system should be used for all expressions of linear measure, weight, and volume. Tables and figures should be kept to a minimum. Information should be presented only once—whether in the text or in a table or figure. For this reason, short tables may be deleted or combined into larger ones during the copy-editing process. Lines should not be typed or inked within tables, and all columns should be provided with headings. Glossy prints or original line drawings of figures may be kept by the author until the Assistant Editor requests them after acceptance of a manuscript. Figure captions should be typed on a separate sheet, but other types of lettering may appear on the figures themselves. All such lettering must be of professional quality (not typewritten) and large enough to withstand a reduction of approximately 50% in size. Release forms (signed, dated, witnessed, and notarized) must accompany photographs of human subjects. Care should be taken to conceal the identity of persons in such photographs. Authors must also secure permission to use any copyrighted tables or figures. References should conform to the American Psychological Association style.

Footnotes. These should be kept to a minimum, for example those (a) acknowledging grant support or help in carrying out the research or in preparation of the manuscript, (b) noting change in affiliation of an author, or (d) stating the availability of supplementary information.

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Ref: AMcM



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2 December, 1999

Ms N Suzann Roy
Department of Psychological Medicine
Academic Centre
Gartnavel Royal Hospital
1055 Gt Western Road
Glasgow
G12 0XH

Dear Ms Roy

PROJECT: *An investigation into autobiographical memory assessment in people with mild learning disabilities*

Many thanks for sending the above named submission to the Research Ethics Committee. Your proposal was debated at our meeting on Thursday, 11 November 1999.

The Committee was of the view that this was a well thought out proposal and had been well written. However, there were concerns relating to question 13 and the power of the study and whether the figure of 22 participants was adequate to allow proper conclusions to be drawn. As you know, Dr Fleming discussed this with Dr Bowden and yourself and I am pleased to be able to tell you that the Committee now has no objections from an ethical point of view, to this project proceeding and ethical approval is formally granted. You will know that you should also inform the Research & Development Directorate.

I would also like to take this opportunity to remind you that you should notify the Committee if there are any changes, or untoward developments, connected with the study – the Committee would then require to further reconsider your application for approval. The Committee would be grateful if a brief final report on your project could be forwarded to the Committee when the project reaches its conclusion.

May I wish you every success with your study.

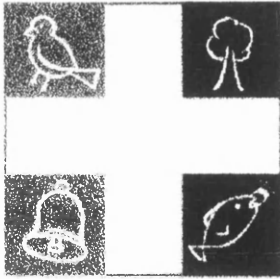
Yours sincerely

A W McMAHON
Administrator – Research Ethics Committee

Medical Director: Tel: 0141 211 3824 Fax: 0141 211 3971 Email: lainw@gartnavel.gla.ac.uk

Trust Headquarters Gartnavel Royal Hospital 1055 Great Western Road Glasgow G12 0XH Tel: 0141 211 3600





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AN INVESTIGATION INTO AUTOBIOGRAPHICAL MEMORY ASSESSMENT IN PEOPLE WITH MILD LEARNING DISABILITIES

KEY WORKER/CLINICIAN INFORMATION SHEET

This study aims to investigate memory for past life events (autobiographical memory) in people with mild learning disabilities. Two different versions of the assessment will be compared. Firstly participants will be assessed to establish level of intellectual ability. This is important as the study is targeted at people who have mild learning disabilities. The second part of the study will compare two different versions of an autobiographical memory assessment. Participants will be assessed on two occasions. Session 1 is expected to last up to 90 minutes (this time includes a 15 minute break) and session 2 should last up to one hour.

Most psychological therapies are based on the person's ability to recall significant life events. This study will therefore be important in highlighting the quality of autobiographical memories people with mild learning disabilities are capable of reproducing for use in therapy. The results will potentially have significance for how some psychological therapies are currently used with people who have a learning disability.

As the individual's key worker/clinician you will be asked to complete a questionnaire about the potential participant's current mental health status. This will help decide whether or not the person you have in mind meets the criteria for inclusion in the study. Completion of the

questionnaire should take no more than 15 minutes of your time. This phase of the research procedure does not involve any direct client contact.

All the information collected in this study will be fully confidential. Participants are free to withdraw from the study at any time, without having to give an explanation. Should participants refuse to take part, or withdraw from the study, this will not affect their care or the services they receive, in any way.

Original instructions for autobiographical memory assessment**(Wilhelm et al, 1997)**

I'll be showing you a series of words. Each word is printed on a separate card. When I show you a word I'd like you to think of the first specific personal memory that comes to mind. Your memory should refer to a certain event that happened to you on a particular day. So, for example, if the word were 'car' you might think of the day on which you bought your first car. Or if the word were 'relaxation' you might think of the fishing trip you took last summer. As soon as you think of a memory I want you to describe it out loud. I'll be timing how quickly you recall a specific memory with this stop-watch. I'll also record your responses on this tape recorder. Before you begin I'll give you four words for practice. Do you have any questions?

Instructions for Standard Condition of Autobiographical Memory Assessment

Introduction

After person is settled in room begin with ...

‘Thank you for agreeing to take part in the work that I am doing. You have already read the information sheet (or had somebody read it over with you) and you have signed the consent form. Before we start do you have any worries about what we will do today?’ [*If participant says ‘yes’, establish what the concern is and attempt to alleviate before continuing*].

Continue with...

‘Today we’ll be talking about some things you can remember about your life and, as we agreed, I’ll be taping what you say on this tape recorder to help me remember what we talked about. Later, I will listen to the tape to work out how quickly you can think of different memories, OK?’

Assessment Instructions

‘To help you talk about things you can remember from your life, I’ll say a word and also show you the word written on a card like this.’ - [*show participant blank example card*]. **‘It doesn’t matter if you can’t read the word on the card (I am not testing how well you can read things).’**

‘When I say the word and show you the card, I’d like you to think of a day in your life that the word reminds you about - something you’ve done in the past or something that’s happened to you. You will decide what you want to tell me.’

‘For example, if I said the word, ‘Letter.’ I would show you the word written on a card like this,’ [*present example cue card ‘Letter’ and say, ‘The card says “Letter”*]. **Then, you would try to think of a day in your life when you remember getting a letter or sending someone a letter or, something else from your life that ‘Letter’ reminds you about’.**

[Check person's understanding by saying the following...] **'So, if I said the word 'Letter' and showed you the word on a card, what would you have to do?'** *[if person has not understood say 'you would try and remember a day when you got a letter or sent one to someone, or something else from your life that the word 'Letter,' reminds you about, OK?']* **'That's just an example of what I'll ask you.'**

'So, when I say a word, and show you the word written on a card, think about a day in your life that the word reminds you about - tell me what comes into your head and everything you can remember about it.'

'First, we will try two practice words. Then, we'll talk about 12 other words. Does that seem OK so far?'

[After administration of practice words say...]

'Now you've had some practice let's try some more words'

Instructions for administering cue words

'The word is '...' *[for subsequent words say, 'The next word is ...']*. **This is the word '...' written on a card. Think about a day in your life that the word '...' reminds you about. Tell me as soon as you remember something from your life to do with '...'**

[Begin timing]. If, after 60 seconds, person hasn't responded repeat this instruction.

If the person responds with only a general memory prompt as follows ...

'Can you tell me more about the day when this happened?' *[If NO response say...]*

'Can you think of one time from your life, does one event come to mind to do with '...?' *[If necessary prompt again with ...]* **'Can you tell me any more about that?'**

[Move on, if person seems able to respond only with a general memory].

If, after the three minute time limit, the person has not given an answer, say...

'Does '...' make you think about anything from your life?' 'What does the word '...' make you think about?'

After response is given, encourage participant with consistent comments, for example,

'OK; Well done; Right; Let's try the next one.'

Instructions for Pictorial Condition of Autobiographical Memory Assessment

Introduction

After person is settled in room begin with ...

‘Thank you for agreeing to take part in the work that I am doing. You have already read the information sheet (or had somebody read it over with you) and you have signed the consent form. Before we continue do you have any worries about what we will do today?’ [*If participant says ‘yes’, establish what the concern is and attempt to alleviate before continuing*].

Continue with...

‘Today we’ll be talking about some things you can remember about your life and, as we agreed, I’ll be taping what you say on this tape recorder to help me remember what we talked about. Later, I will listen to the tape to work out how quickly you can think of different memories, OK?’

Assessment Instructions

‘To help you talk about things you can remember from your life, I’ll say a word and also show you a picture of the word, on a card like this.’ [*show participant blank example card*].’

‘When I say the word and show you the card, I’d like you to think of a day in your life that the word reminds you about - something you’ve done in the past or something that’s happened to you. You will decide what you want to tell me.’

‘So, for example, if I said the word ‘Letter.’ I would show you the picture on a card like this, [*present example cue card ‘Letter’ and say, “This is a picture of a ‘Letter’*]. Then you would try to think of a day in your life when you remember getting a letter or sending someone a letter, or something else from your life that ‘Letter’ reminds you about.’

[Check person's understanding by saying the following...] **'So, if I said the word 'Letter', and showed you the picture on a card, what would you have to do?' [if person has not understood say 'you would try and remember a day when you got a letter or sent one to someone, or something else from your life that the word 'Letter' reminds you about, OK?]. 'That's just an example of what I will ask you.'**

'So, when I say a word and show you the picture on a card, think about a day in the past that the word reminds you about - tell me what comes into your head and everything you can remember about it.'

'First, we will try two practice words. Then we'll talk about 12 other words. Does that seem OK so far?'

[After administration of practice words say...]

'Now you've had some practice let's try some more words'

Instructions for administering cue words

'The word is '...' This is a picture of '...' Think about a day in your life that the word '...' reminds you about. Tell me as soon as you remember something from your life to do with '...'

[Begin timing]. If, after 60 seconds, person hasn't responded repeat this instruction.

If the person responds with only a general memory prompt as follows ...

'Can you tell me more about the day when this happened?' [If no response say...]

'Can you think of one time from your life, does one event come to mind to do with '...?'' [If necessary prompt again with ...] 'Can you tell me any more about that? [Move on, if person seems able to respond only with a general memory].

If, after the three minute time limit, the person has not given an answer, say...

'Does '...' make you think about anything from your life?' 'What does the word '...' make you think about?'

After response is given, encourage participant with consistent comments, for example,

'OK; Well done; Right; Let's try the next one.'

Letter

Flower

Juice

Happy

Sad

Scared

Surprised

Angry

Disgusted

Dog

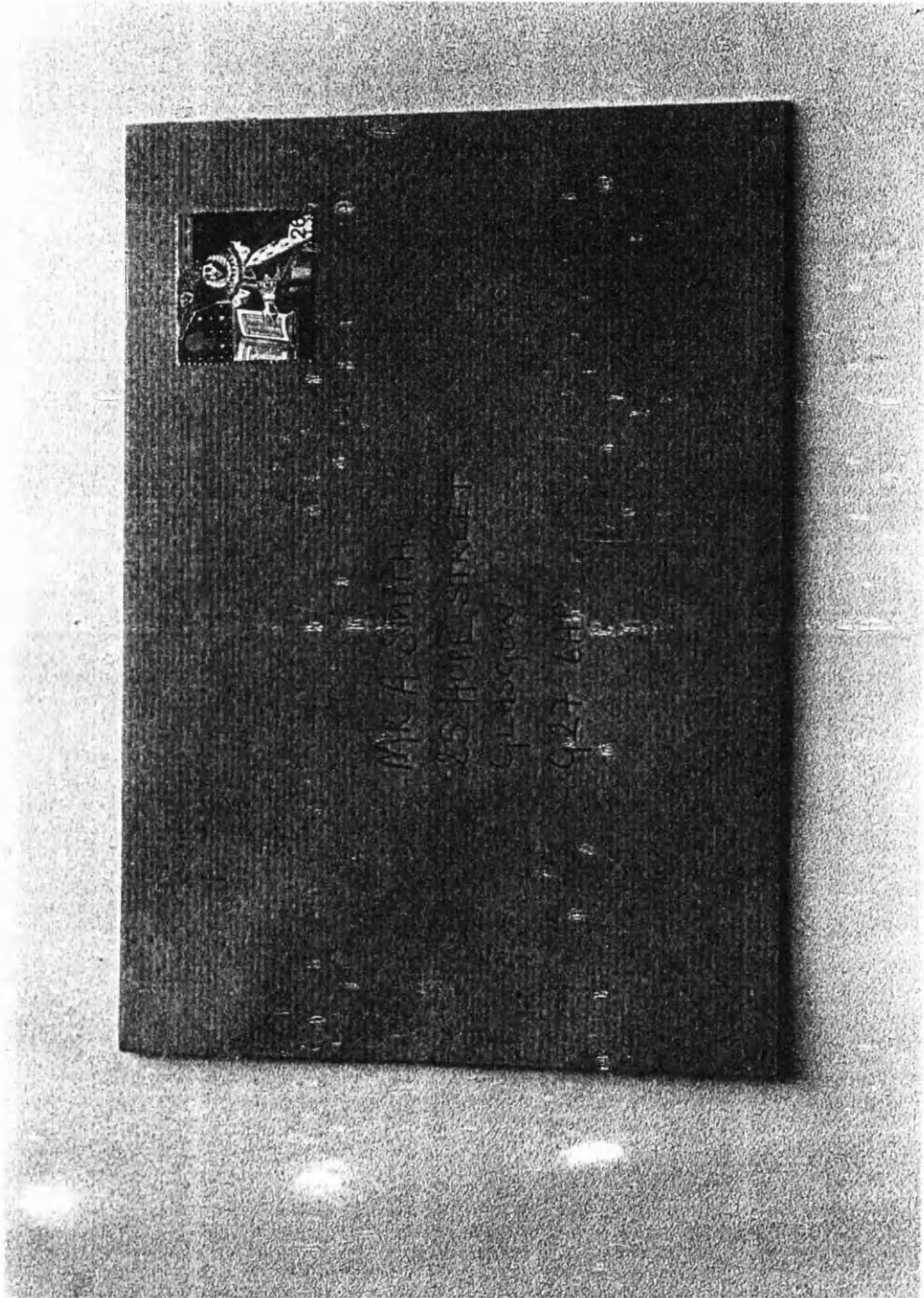
Car

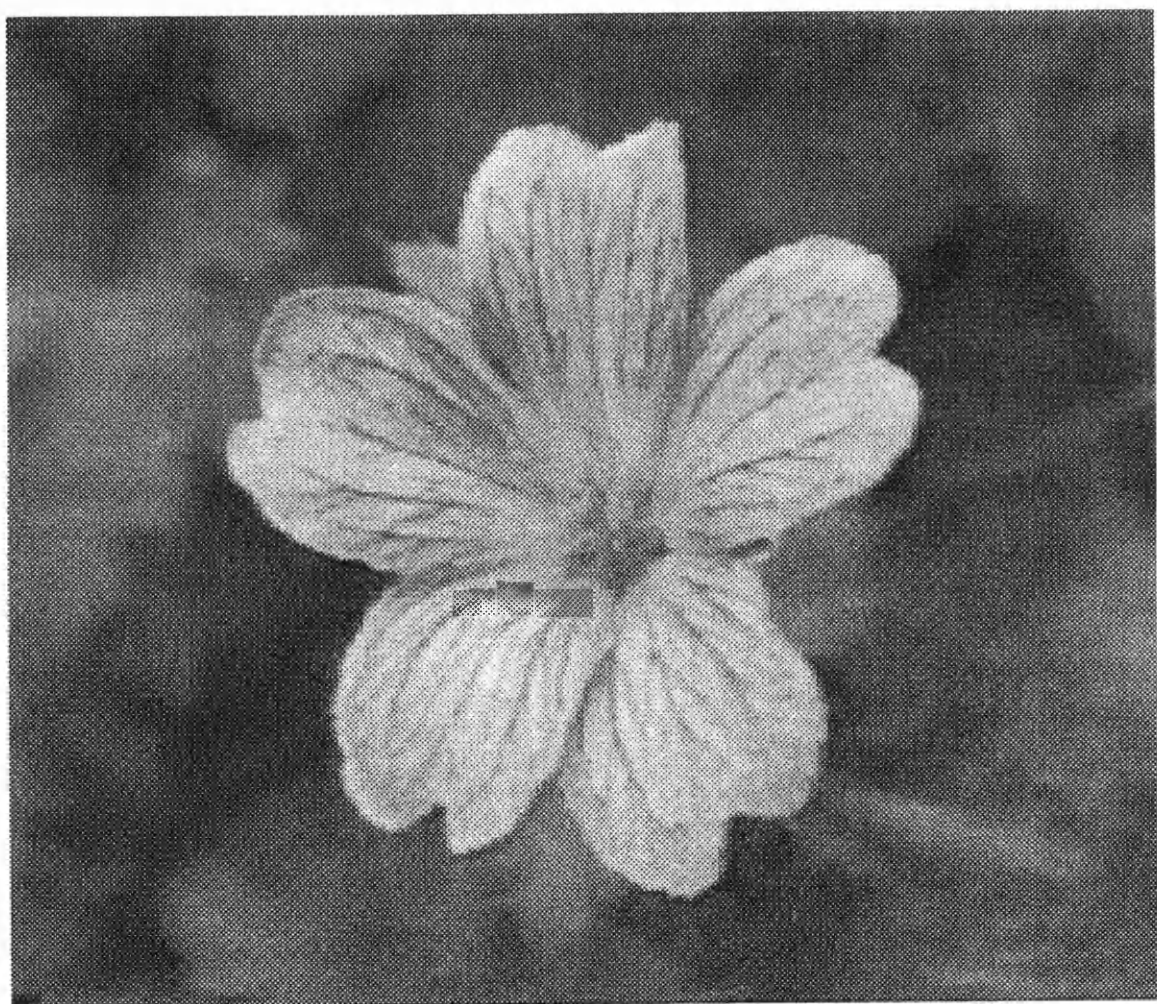
Shop

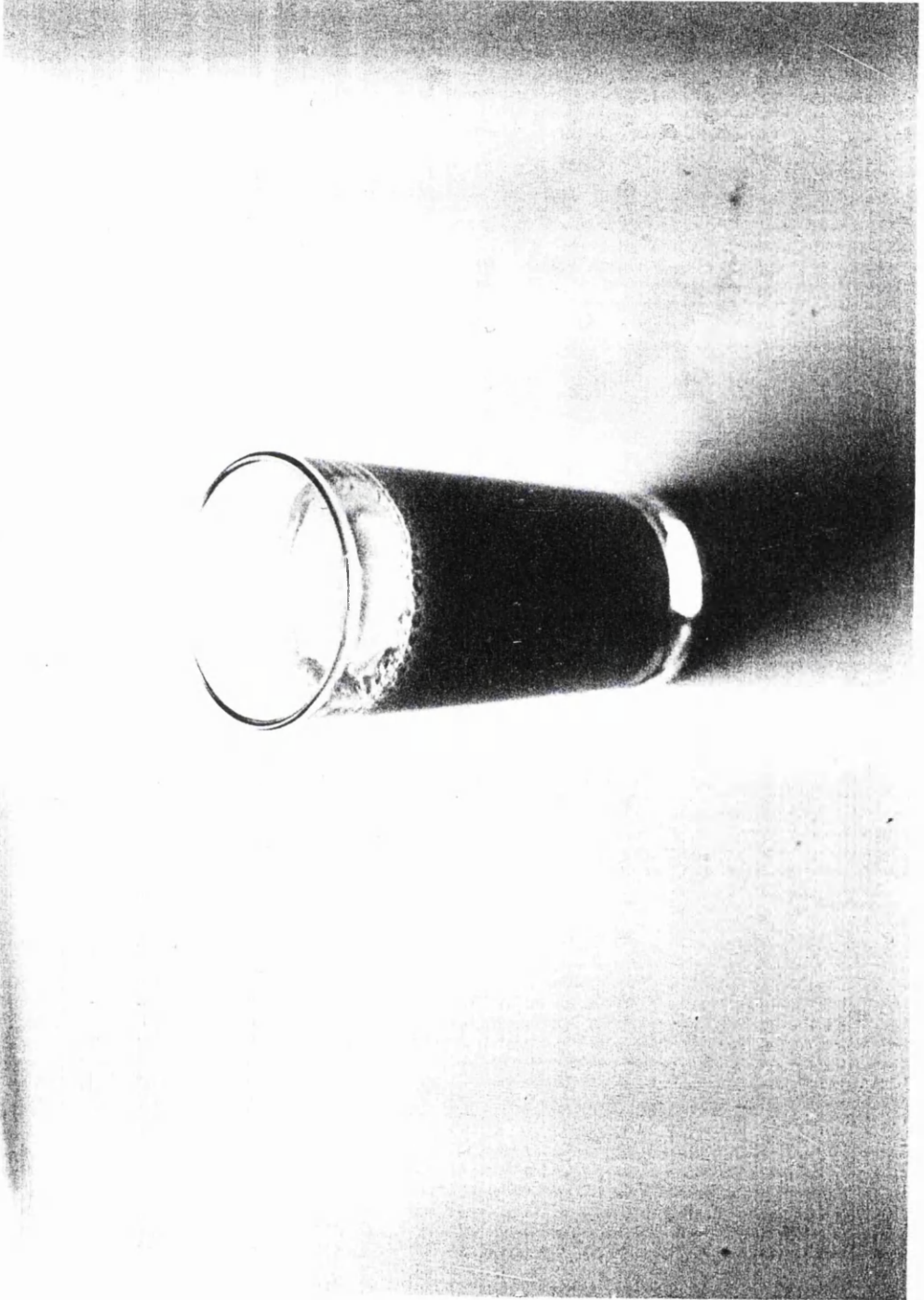
Baby

Shoes

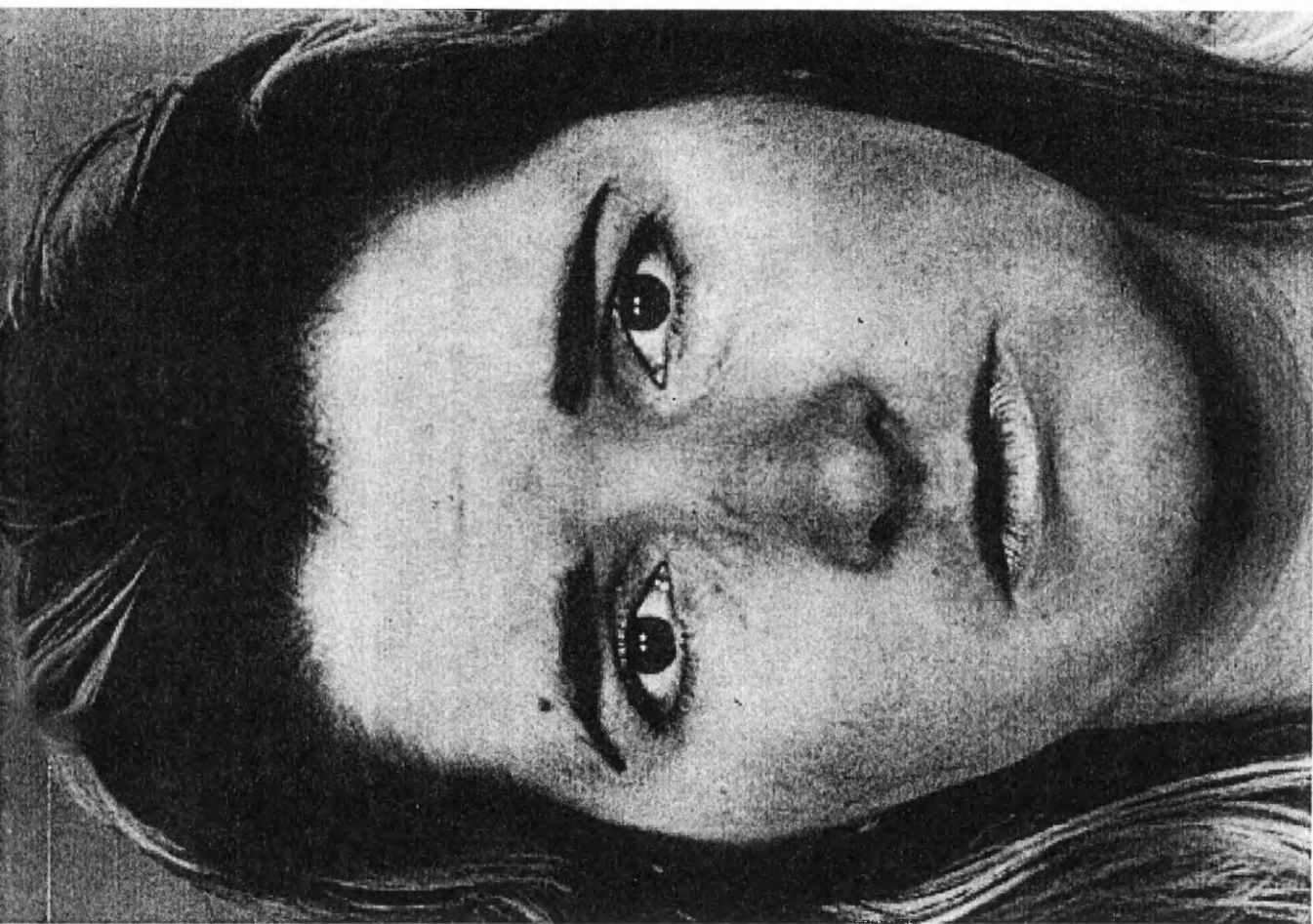
Jacket











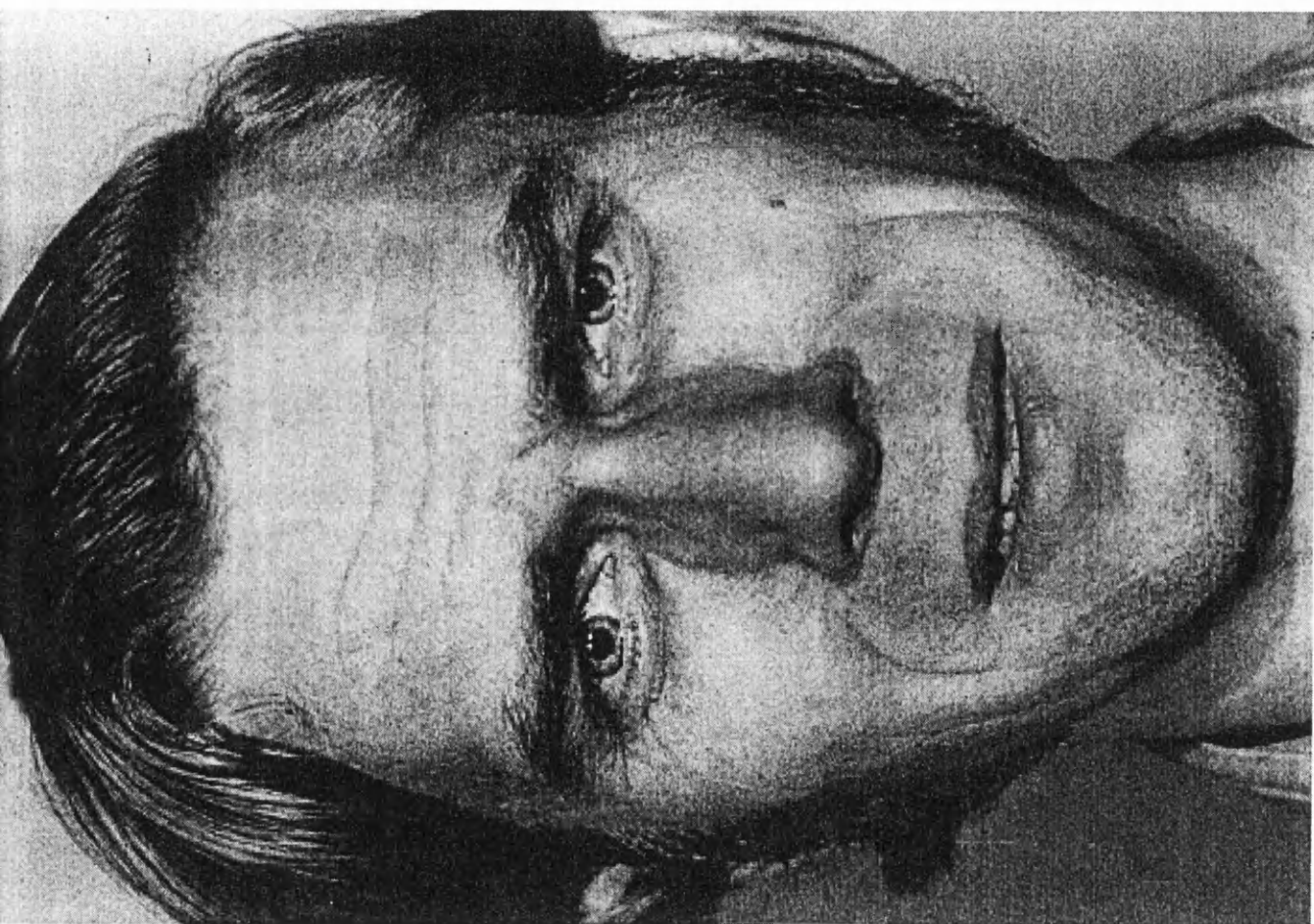


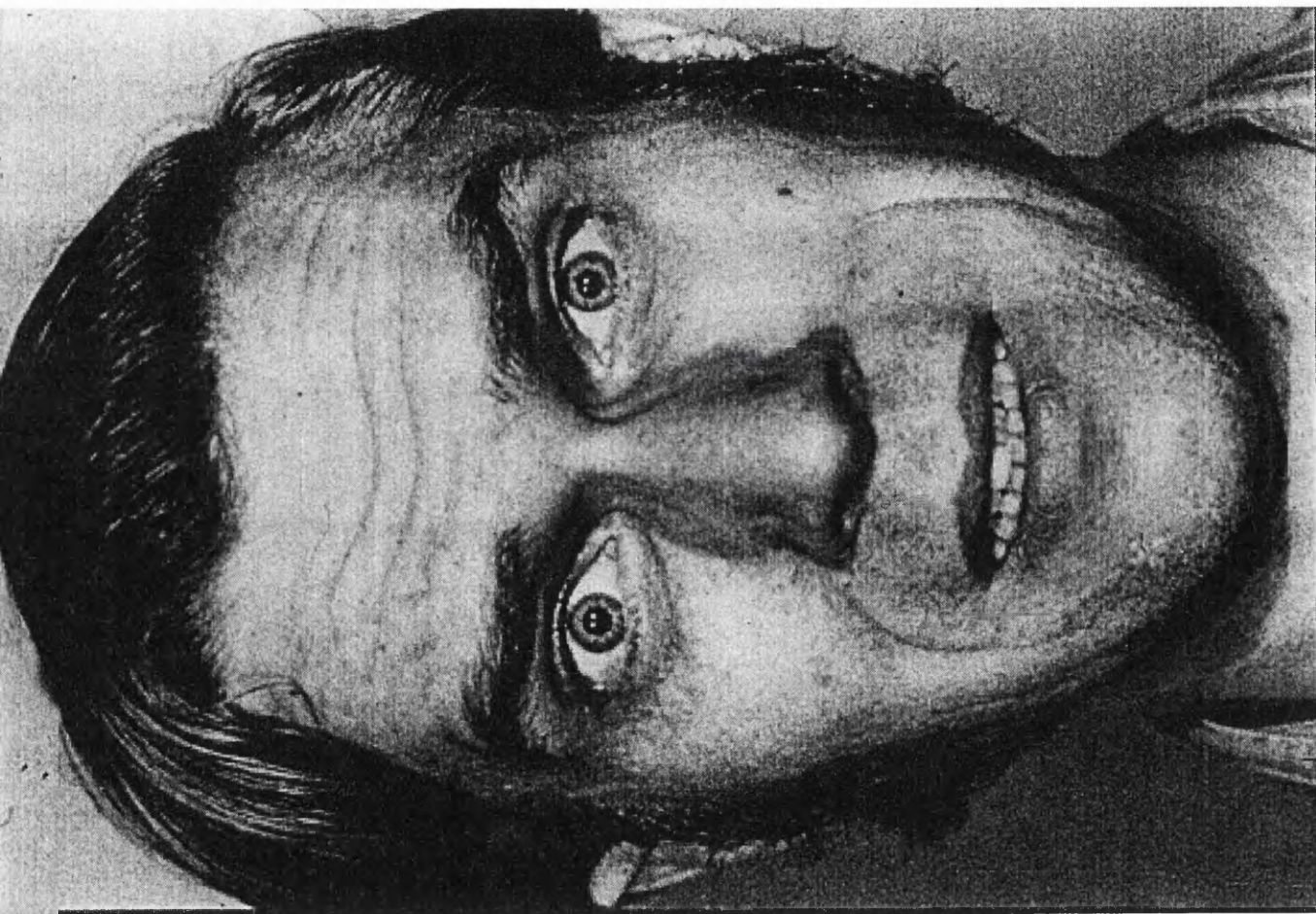




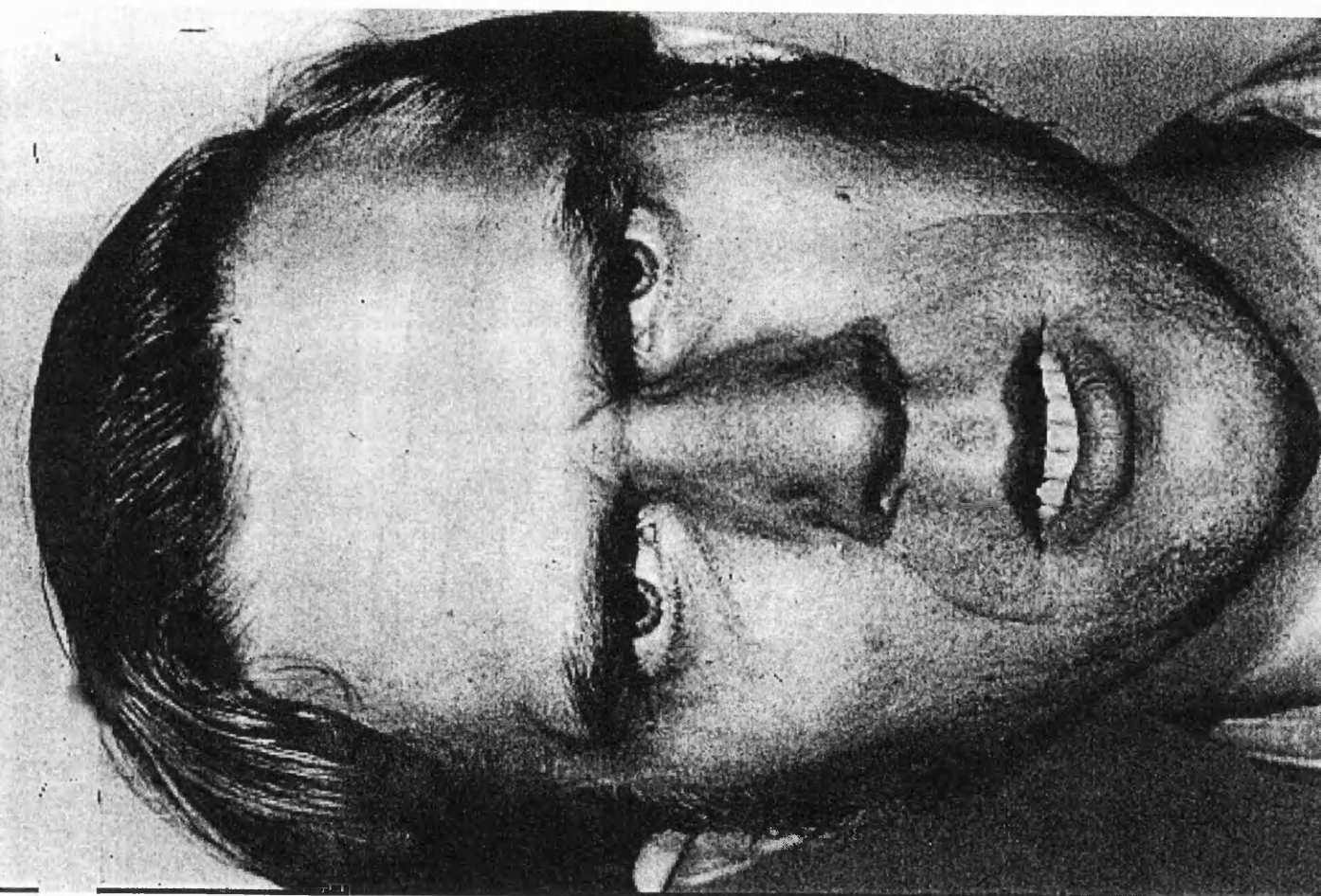




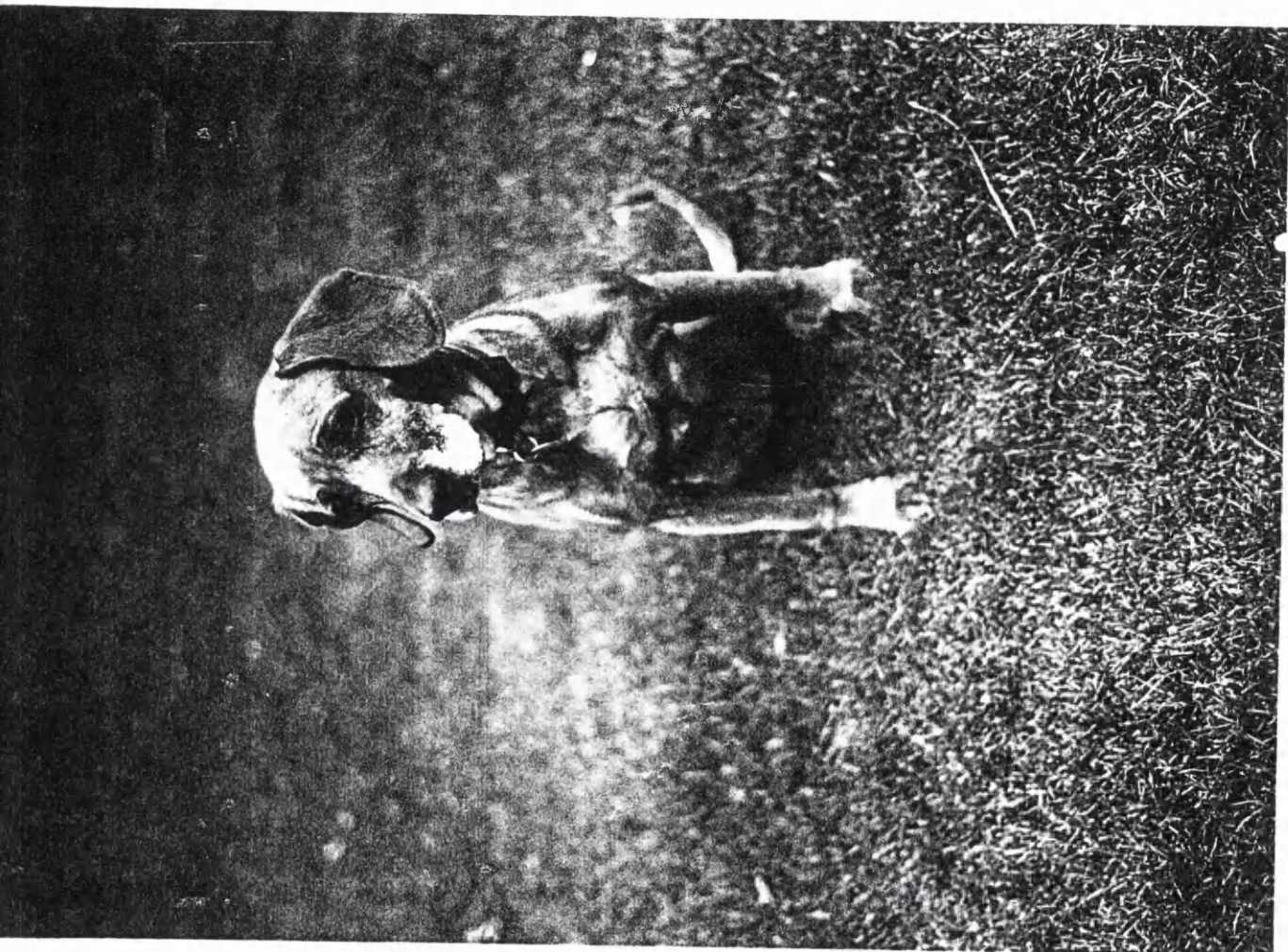




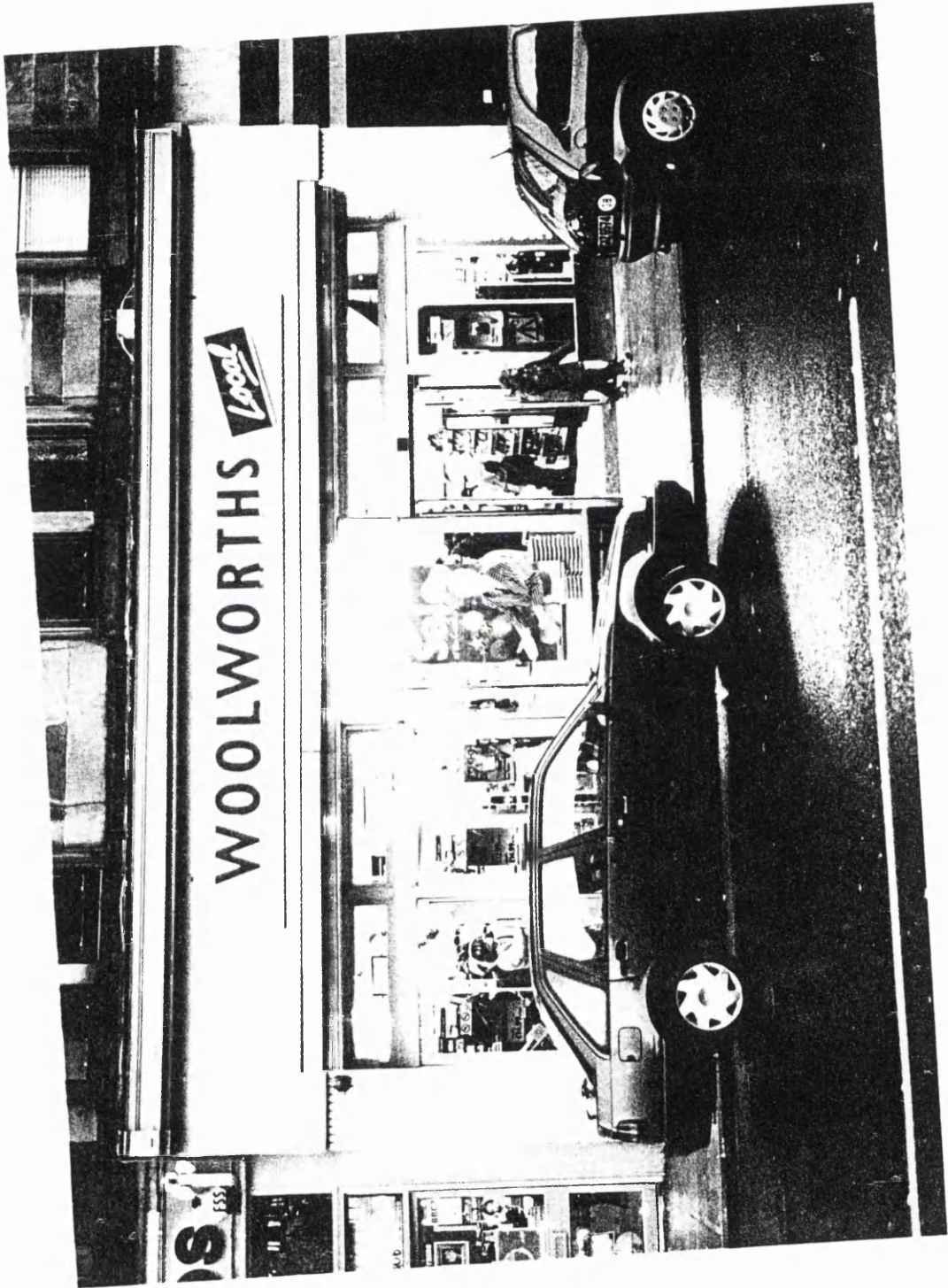


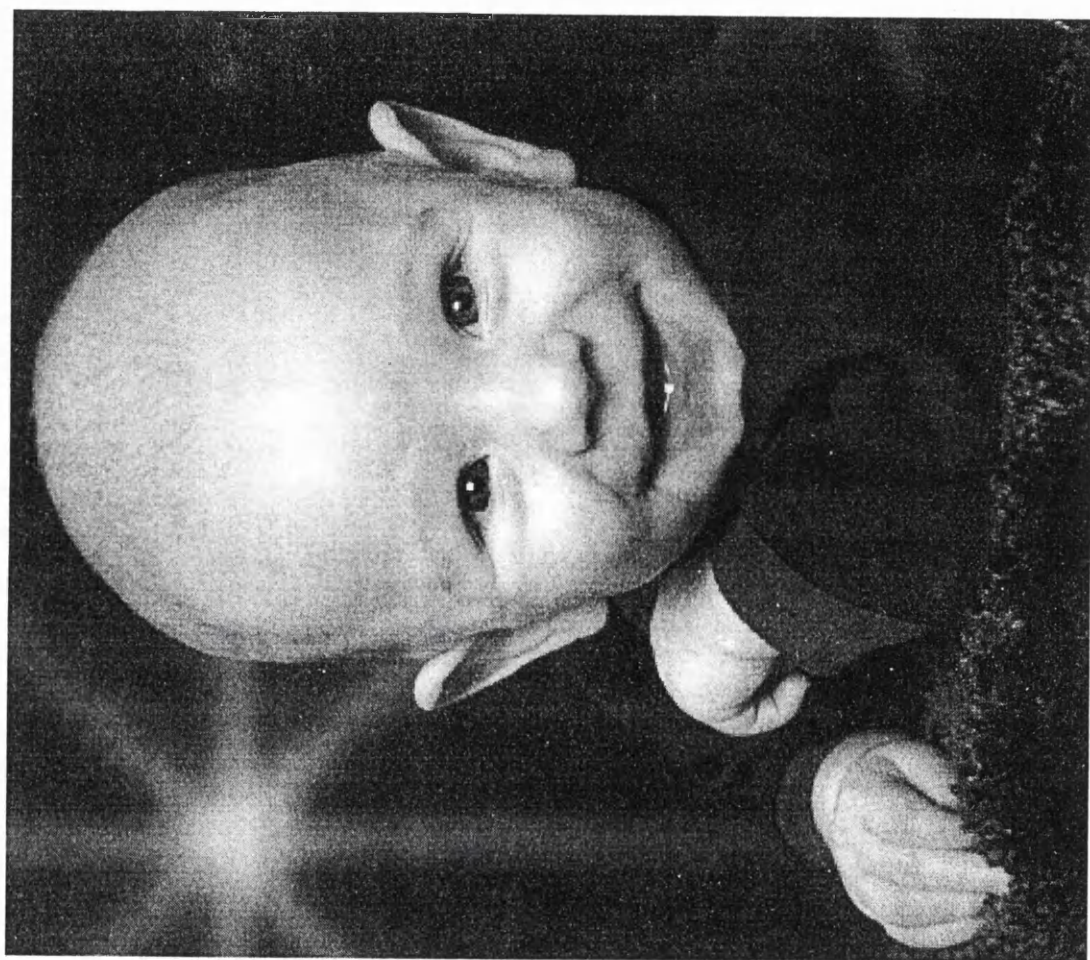


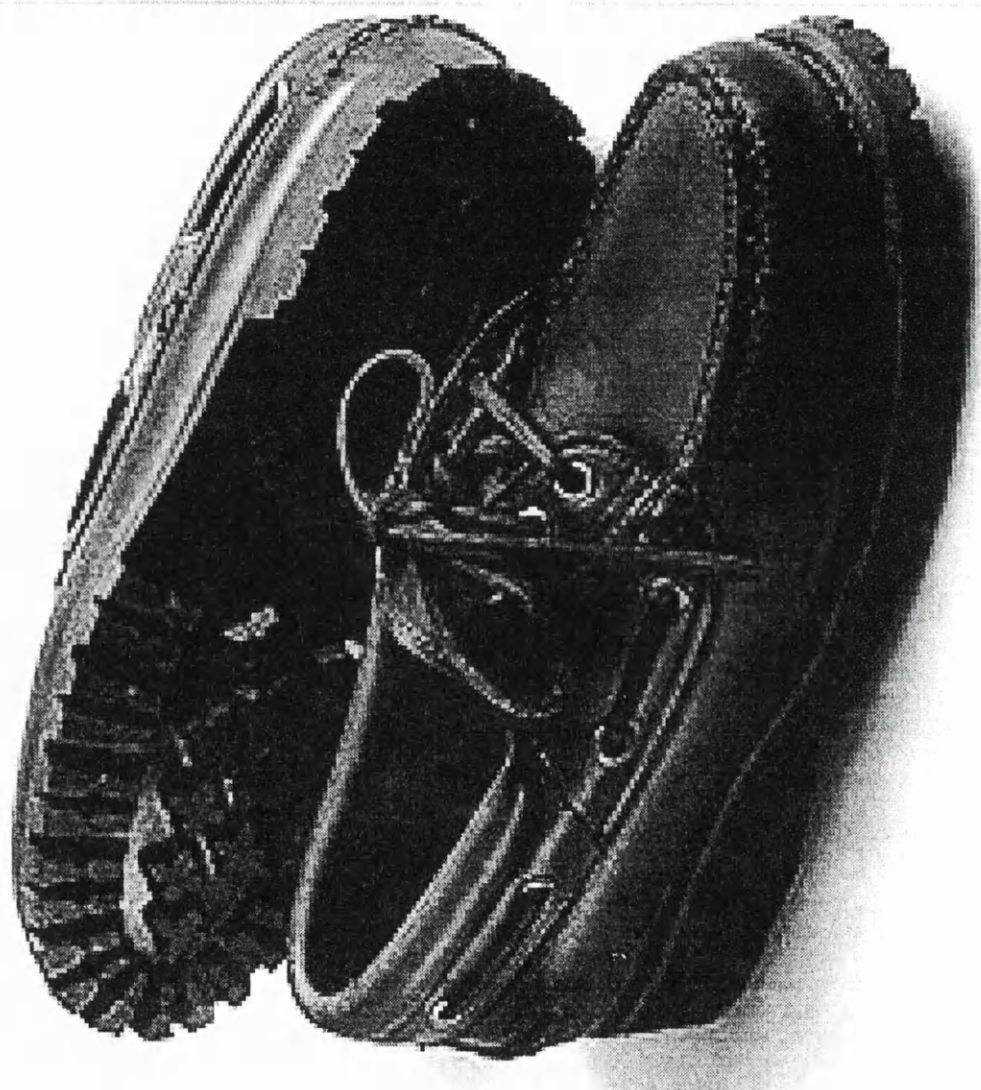


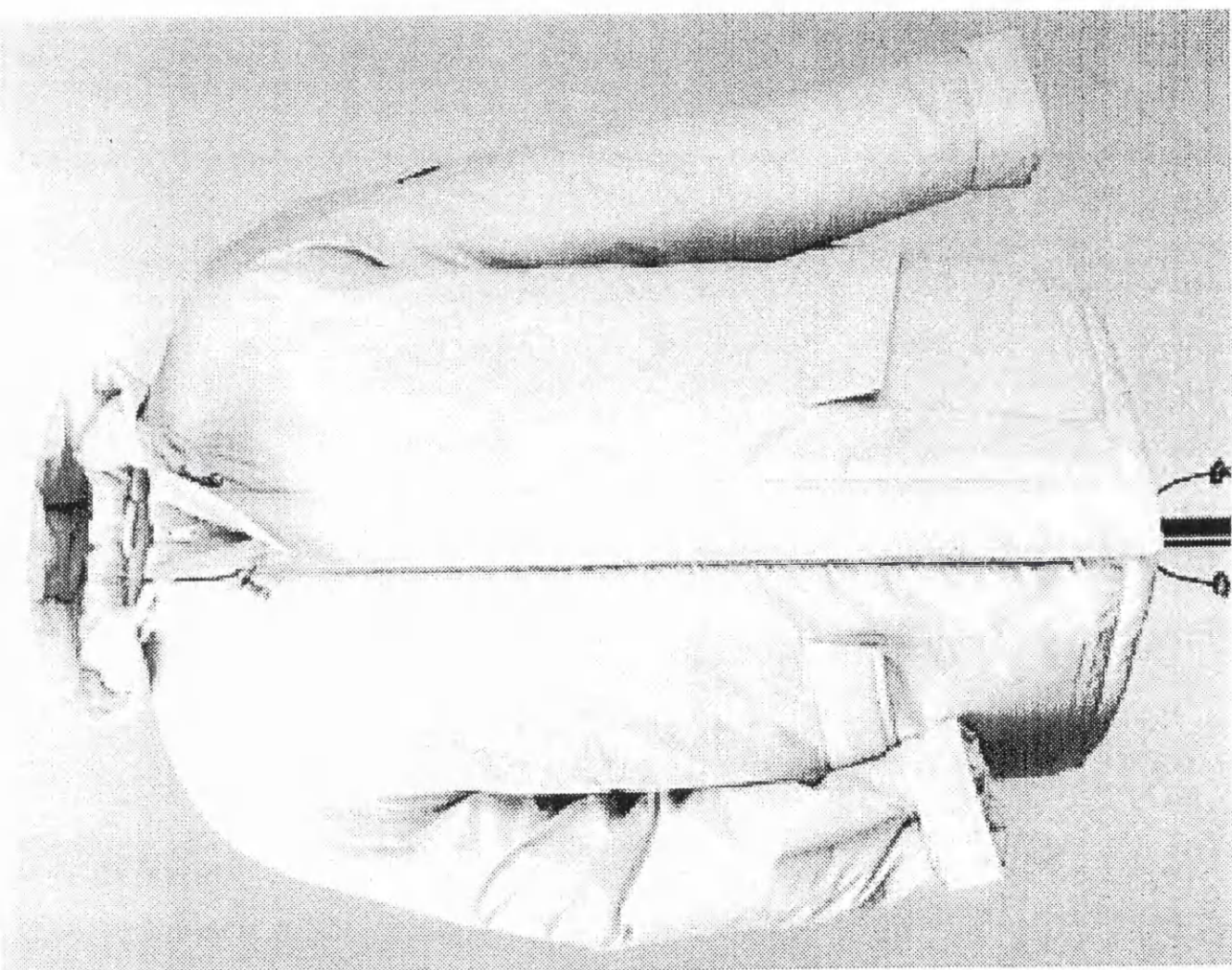


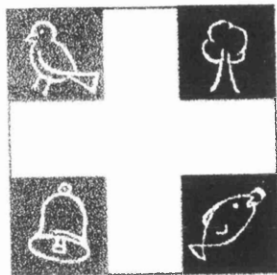












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**Project Title: An Investigation into Autobiographical Memory in People
with Mild Learning Disabilities**

INFORMATION SHEET FOR PARTICIPANTS

I, Suzann Roy, am doing some work with the people who use this service. I am trying to find out how well people can remember different things from the past. I will be asking you to look at some pictures or listen to some words to see if you can think of something from your past that the word or picture reminds you about. YOU will decide what you want to tell me.

First of all, I will be asking you to do a short test that will help me to work out some of the things you are good at, and some of the things that you find hard to do. This short test may be the only thing that I ask you to do. The information I get from this test might be enough to help me with my research.

However, I will be asking some people to spend a bit more time telling me about some things they remember from their past life. If you are one of these people, I would like to meet with you on two different days. The first meeting will take about an hour and a half of your time (you will be able to take a break), and the second meeting will take about an hour. The meetings will take place here at the centre.

Sometimes when we meet I will tape-record what you tell me, to help me remember what we have talked about. Before I tape-record anything you say I will first ask your permission. Anything that you talk about will be kept private and after I have finished my work, the tape will be destroyed.



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**Project Title: An Investigation into Autobiographical Memory Assessment in
People with Mild Learning Disabilities**

PARTICIPANT CONSENT FORM

Name of Participant _____

RESPONSE (please circle)

- | | | |
|---|------------|-----------|
| • Have you been told about the work that I, Suzann Roy, will be carrying out? | YES | NO |
| • Do you understand what I will be asking you to do?
Is there anything you are not sure about? | YES | NO |
| • Do you know that anything you say to me will be kept private (unless I think you or someone else is at risk)? | YES | NO |
| • Do you know that you can choose not to participate? | YES | NO |
| • Do you know that you can stop doing the study
- At ANY time? | YES | NO |
| - Without having to tell anyone why you want stop? | YES | NO |

questionnaire should take no more than 15 minutes of your time. This phase of the research procedure does not involve any direct client contact.

All the information collected in this study will be fully confidential. Participants are free to withdraw from the study at any time, without having to give an explanation. Should participants refuse to take part, or withdraw from the study, this will not affect their care or the services they receive, in any way.

Notes for Contributors

Papers, articles and other contributions should be sent to the Editor, Health Bulletin, Scottish Office Department of Health, Room 143, St Andrew's House, Edinburgh EH1 3DE. They must be submitted exclusively for Health Bulletin. Acceptance is on the understanding that editorial revision may be necessary. All papers are reviewed by the Editor and by peer review, referees being drawn from a panel of appropriate professionals in the NHS in Scotland. No correspondence can be entered into about articles found unsuitable and returned to authors.

Material submitted for publication must be typewritten on one side of the paper only, in double spacing and with adequate margins and each page should be numbered. The top typed copy should be submitted, with four other copies. All papers should be prefaced by a structured Abstract, of about 250 words in length. It should normally contain 6 clearly headed sections entitled Objective, Design, Setting, Subjects, Results and Conclusion. The name, appointment and place of work of the authors should be supplied on a separate title page. This same page should include the full postal address of one author, to whom correspondence and reprints will be directed. There should be adequate references to any relevant previous work on the subject; these references should appear at the end of the material on a separate page or pages, using the Vancouver style, which in the case of papers in journals includes:

- Surname and initials of author(s)
- Title of paper
- Full name of Journal
- Year published
- Volume number
- Opening and closing page numbers

Reference to books should similarly include author's name and initials, full title, edition (if necessary), place of publication, publisher's name, year, and if required volume number, chapter number or page number.

Short Communications. The Bulletin now publishes short communications (not exceeding three pages in length) as a separate section, and we aim to offer speedier publication for these. Material intended for this section should be submitted in the above form, and the covering letter should state the intention.

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Substance Misuse Service Staff Interview

Date:

Staff Profession /Grade:

I am conducting a study on the number of heroin dependent clients referred to the Substance Misuse Service between April 1996 and March 1997, who underwent a methadone detoxification program. I am interested in the differences between clients listed as having completed detoxification versus those listed as not having completed their program.

As part of the investigation I want to establish the criterion used by staff when filling in the 'detox completed' section of a client's data form. In other words, what do you expect of the client for the completion of methadone detoxification?

Staff member's definition:

